

**TO ESTIMATE THE INCIDENCE, ETIOLOGY AND
RISK FACTORS OF WOUND INFECTIONS IN WOMEN
WHO UNDERGOES CAESAREAN SECTION AT
KILPAUK MEDICAL COLLEGE HOSPITAL-A
PROSPECTIVE ANALYTICAL STUDY**

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*In partial fulfillment of the requirements
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**M.S. DEGREE EXAMINATION BRANCH – II
(OBSTETRICS & GYNAECOLOGY)**



**KILPAUK MEDICAL COLLEGE
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BONAFIDE CERTIFICATE

Certified that the dissertation titled **“TO ESTIMATE THE INCIDENCE, ETIOLOGY AND RISK FACTORS OF WOUND INFECTIONS IN WOMEN WHO UNDERGOES CAESAREAN SECTION AT KILPAUK MEDICAL COLLEGE HOSPITAL-A PROSPECTIVE ANALYTICAL STUDY”** is a bonafide work of the candidate **Dr.S.JAYALAKSHMI**, post graduate student, Department of Obstetrics & Gynaecology, Kilpauk Medical College, Chennai – 10, done under my guidance and supervision, in partial fulfillment of regulations of **The Tamilnadu Dr.MGR Medical University** for the award of **M.S. Degree Branch II, (Obstetrics & Gynaecology)** during the academic period from May 2012 to April 2014.

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DECLARATION

I **Dr. S.JAYALAKSHMI**, solemnly declare that this dissertation **“TO ESTIMATE THE INCIDENCE, ETIOLOGY AND RISK FACTORS OF WOUND INFECTIONS IN WOMEN WHO UNDERGOES CAESAREAN SECTION AT KILPAUK MEDICAL COLLEGE HOSPITAL-A PROSPECTIVE STUDY”** was prepared by me at Government Kilpauk Medical College and Hospital, Chennai, under the guidance and supervision of **Prof.Dr.P.S.JIKKI KALAISELVI, M.D.,D.G.O.**, Professor, Department of Obstetrics and Gynaecology, Govt. Kilpauk Medical College and Hospital, Chennai. This dissertation is submitted to **The Tamil Nadu Dr. M.G.R. Medical University, Chennai** in partial fulfillment of the University regulations for the award of the degree of **M.S. Branch II (Obstetrics and Gynaecology)**.

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INTRODUCTION

Wound complications following caesarean section or gynecologic surgery is a common complication that accounts for significant extension of hospital stays.¹

The infection rate following caesarean section ranges from 3 to 15% with an average of about 6%. But, when prophylactic antimicrobial was given the incidence was less than 2%.²

² Before the mid-19th century, postoperatively patients developed "Irritative fever", purulent discharge from their incisions, sepsis, and

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INTRODUCTION Wound complications following caesarean section or gynecologic surgery is a common complication that accounts for significant extension of hospital stays.¹ The infection rate following caesarean section ranges from 3 to 15% with an average of about 3%. But, when prophylactic antimicrobial was given the incidence was less than 2%.² Before the mid-19th century, postoperatively patient developed "Irish fever", purulent discharge from their incisions, sepsis, and rarely death.³ The survivalance of SSIs brings about the awareness to the present day modern surgeon about the proper use of prophylactic and therapeutic antibiotics and strict aseptic technique and adequate...

ABSTRACT

BACKGROUND:

The postpartum period is the challenging time for women and a post operative wound infection further intensifies an already difficult period of adjustment. Despite numerous investigations there is disagreement about risk factors of surgical site infection after caesarean section. Therefore the purpose of this study is to know the frequency of wound infections; associated risk factors and the various treatment modalities in treating wound infections.

OBJECTIVES: To analyse the frequency of wound infections after caesarean section, to find out associated risk factors and the most common causative organism in wound infections. To know about the various treatment modalities to treat wound infections.

MATERIALS AND METHODS:

This study will be carried out on 700 cases undergoing lower segment caesarean section. Both elective and emergency caesarean section will be included in the study. In postoperative period the women will be monitored for signs of development of wound infections and bacteriological study will be carried out if necessary. Management of wound infections and their outcome will be evaluated.

RESULT: A total of 700 patients undergoing LSCS were selected. 8.14% of the cohort in the study developed wound infections which were mainly superficial wound infection (56.41%). Anemia, DM, chorioamnionitis, obstructed labour, PROM, obesity were significant risk factors for the development of wound infections. The most common bacterial isolate in the study was staphylococcus aureus.

CONCLUSION: The study confirms that risk factors like anemia, DM, PROM, chorioamnionitis, obstructed labour, obesity, hypertension, pose risk for wound complication. Wound infections increase the duration of hospital stay .

Key words: wound infection, caesarean section

TABLE OF CONTENTS

Sl.No.	Title	Page No.
1.	INTRODUCTION	1
2.	REVIEW OF LITERATURE	2
2.	AIM & OBJECTIVES OF THE STUDY	51
5.	MATERIALS AND METHODS	52
6.	STATISTICAL ANALYSIS	54
7.	DISCUSSION	82
8.	SUMMARY	86
9.	CONCLUSION	88
	ANNEXURES	
	BIBLIOGRAPHY	
	PROFORMA	
	MASTER CHART	
	ETHICAL COMMITTEE APPROVAL	
	CONSENT FORM	

LIST OF TABLES

1.	Table-1 Incidence of wound infections	55
2.	Table-2 Type of wound infections	56
3.	Table-3 Wound infections with reference to socioeconomic status	57
4.	Table-4 Wound infections with reference to parity	59
5.	Table-5 Wound infections with reference to Age	61
6.	Table-6 Wound infections with reference to Type of caesarean section	63
7.	Table-7 Wound infections with reference to patient characteristics	64
8.	Table-8 Wound infections with reference to BMI	66
9.	Table-9 Wound infections with reference to the Type of skin incision	68
10.	Table-10 Wound infections with reference to Duration of operation	70
11.	Table-11 Wound infections with reference to Skin closure	72
12.	Table-12 Wound infections with reference to Duration of antibiotics	74
13.	Table-13 Wound infections with reference to Duration of Hospital stay	76
14.	Table-14 Most commonly obtained organisms	78
15.	Table-15 Management of wound infections	79

LIST OF FIGURES

1.	Fig-1 Incidence of wound infections	55
2.	Fig-2 Type of wound infections	56
3.	Fig-3 Wound infections with reference to socioeconomic status	58
4.	Fig-4 Wound infections with reference to parity	60
5.	Fig-5 Wound infections with reference to Age	61
6.	Fig-6 Wound infections with reference to Type of caesarean section	63
7.	Fig-7 Wound infections with reference to patient characteristics	65
8.	Fig-8 Wound infections with reference to BMI	67
9.	Fig-9 Wound infections with reference to the Type of skin incision	69
10.	Fig-10 Wound infections with reference to Duration of operation	71
11.	Fig-11 Wound infections with reference to Skin closure	73
12.	Fig-12 Wound infections with reference to Duration of antibiotics	75
13.	Fig-13 Wound infections with reference to Duration of Hospital stay	77

LIST OF ABBREVIATIONS

SSI	:	Surgical Site Infection
CDC	:	Center for Disease Control and Prevention
OR	:	Operating Room
PROM	:	Premature Rupture Of Membranes
DM	:	Diabetes Mellitus
AMP	:	Anti Microbial Prophylaxis
LSCS	:	Lower Segment Caesarean Section
CFU	:	Colony Forming Units
FDA	:	Food and Drug Administration
PDGF	:	Platelet Derived Growth factor
EGF	:	Epidermal Growth Factor
FGF	:	Fibroblast Growth Factor
TGF	:	Transforming Growth Factor
TNF	:	Tumour Necrosis factor

INTRODUCTION

Wound complications following caesarean section or gynecologic surgery is a common complication that accounts for significant extension of hospital stays.¹

The infection rate following caesarean section ranges from 3 to 15% with an average of about 6%. But, when prophylactic antimicrobial was given the incidence was less than 2%.²

Before the mid-19th century, postoperatively patients developed “Irritative fever”, purulent discharge from their incisions, sepsis, and rarely death.³

The Surveillance of SSIs brings about the awareness to the present day modern surgeon about the proper use of prophylactic and therapeutic antibiotics and strict aseptic technique and adequate monitoring and support with novel surgical and pharmacological and non-pharmacological aids.

Many a studies have been conducted regarding the SSIs under the guidelines provided by CDC. With the current knowledge of SSIs and their attributable risks, under the guidelines of CDC a clinical study of wound infection following caesarean section occurring in Kilpauk Medical College, Chennai has been undertaken to analyze the risks of

wound infection.

REVIEW OF LITERATURE

Historical Review

Caesarean delivery is defined as the birth of a fetus through incision in abdominal wall and uterine wall after 28th weeks of gestation (Cunningham et al, 1997). Caesarean delivery is the most commonly performed operation in obstetrics.

Microbes are as old as the mankind itself. Nobody knows their origin on earth throughout the history of mankind, treating infections has been one of the primary roles of a surgeon. Early in the history of mankind, there was recognition of inter play between wound infections and surgical manipulation. In fact, virtually all wounds became infected and infection was associated with high mortality.⁴

Definition of wound infection

Infection that occurs within 30 days of operation and at least any one of the following:

1. Purulent discharge from the superficial incision, with or without laboratory confirmation.

2. Organisms grown in aseptically obtained culture of tissue or fluid from the superficial incision.
3. At least any one of the signs or symptoms of infection like:
pain or tenderness, localized swelling, redness, or heat.

Other signs of wound infections include

1. Delayed healing not previously anticipated.
2. Discolouration of tissues both within and at the wound margin.
3. Abnormal smell from the wound site.
4. Friable bleeding granulation tissue despite adequate care and proper management.

Superficial Wound Disruption

Superficial wound breakdown (extra fascial wound dehiscence) is defined as postoperative disruption of the layers of the abdominal incision superficial to the fascia. Commonest cause of superficial wound disruption is development of subcutaneous hematoma or seroma formation; as a result of wound infection.⁸

The incidence of extra fascial wound dehiscence is about 5%,

although the range is extremely wide. The incidence depends on the classification of the wound at the time of surgery.

Dehiscence 8

The definition of fascial dehiscence is postoperative separation of the abdominal musculoaponeurotic layers. It occurs during 3rd to 7th postoperative day. The early presentation of the problem emphasizes the importance of proper wound closure technique and modern antibiotics, and would re-emphasize the importance of improvements in delayed absorbable suture materials (although their importance in hernia prevention has been shown). As compared to superficial wound disruption, the incidence of fascial dehiscence is less common but the mortality rate was found to be 24% in a recent study of 198 cases by Madsen et al. The incidence of wound breakdown in 12 studies before 1940 was 0.4%.⁸

Determinants of Infection¹⁰

The important determinants of wound healing are: (a) Bacterial count, (b) virulence of the bacteria, (c) adjuvant effects of microenvironment, and (d) Immunity of the host.¹⁰

Bacterial count

The important factor that affects wound healing is the inoculum

of bacteria. The mode of entry of bacteria may be by droplet, or by direct contact from the surgeons or by instruments or self contamination from the endogenous bacterial flora. Despite proper preparation of the skin, bacteria are always present⁶. The risk increases if the operative site is inoculated with greater than 10^5 organisms per gram of tissue. The risk increases if the operation involves a body structure that is heavily inoculated by organisms, such as bowel. Surgeries of the female genital tract will encounter $10^6 - 10^7$ bacterial/ml.¹⁰

Virulence of the Bacteria

Virulence of the bacteria depends on the ability to produce certain toxins and other substances that invade the host, produce tissue damage or survive within the host tissue. Coagulase-positive staphylococci are more virulent (require smaller inoculum) than the coagulase-negative species. Some strains of clostridium perfringens or group A streptococci are more virulent but may require a small inoculum to cause severe necrotizing infection at the surgical site. The virulence of Escherichia coli is due to endotoxin in its outer cell membrane.¹⁰

The Microenvironment of the wound

Factors that promote wound infection are haemoglobin at the operative site, necrotic tissues, foreign bodies like silk and dead space in

the surgical site.¹⁰

The Immunity of the Host

The fourth variable that affects wound infection is the immunity of the host. Impaired host immunity can be viewed as innate or acquired.

Increased rates of SSIs are due to acquired impairment of host responses particularly in conditions like chronic illnesses, hypoalbuminemia and malnutrition. Other variables that impair the host response are hypothermia, hyperglycemia, corticosteroids and other medications.

The Aggregate Effect

When above all 4 determinants are evaluated in the aggregate, wound infection is a complex biological process and that identification of the causes of an infection in a specific situation can be problematic.¹⁰

Wound Healing Physiology:¹¹

Wound healing process is defined by the Wound Healing Society as “a complex and dynamic process that results in restoration of anatomic continuity and function”.

Wound healing physiology is divided into 3 or 4 sequential yet overlapping phases

1. Hemostasis
2. Inflammation
3. Tissue proliferation
4. Tissue remodeling

Upon injury to the skin, a cascade of events takes place to repair the damage.

Intrinsic and extrinsic coagulation pathways are activated to induce hemostasis and platelet aggregation. After establishment of hemostasis, the platelets breakdown, thereby releasing cytokines and many growth factors like platelet derived epidermal growth factors, transforming growth factors B1 and B2, platelet derived growth factors, platelet activating factors, insulin – like growth factors –1, serotonin and fibronectin. These cytokines and growth factors then attract inflammatory cells such as neutrophils & monocytes to the wound site, which prevent infection by phagocytic microorganisms.

The inflammation phase occurs in response to the initial injury and is manifested by the signs and symptoms of erythema, edema, warmth and drainage. These white blood cells also release growth factors such as fibroblast growth factors, epidermal growth factors, vascular endothelial growth factors, tumor necrosis factors, interleukin-1, interferon gamma, which trigger the activation of fibroblasts and keratinocytes to aid in

healing.

In a clean wound, the inflammatory phase lasts approximately 3 days. Many factors, however can disrupt this cascade of cellular events, including infection, DM, HIV, immunosuppression thus causing a delay in wound healing.¹¹

The proliferate phase consists of 3 components

Angiogenesis; collagen synthesis, granulation formation, epithelialization and wound contraction. The purpose of angiogenesis is to create new vasculature by VEGF to supply blood to the damaged area to aid healing. Collagen then fills the open wound with new connective tissue, depositing an extracellular matrix material to serve as the basis for wound closure and scar formation. These processes occur simultaneously and are codependent.¹¹

When wounds heal by primary intention, like in sutured incisions, the rate of collagen formation reaches a peak around the fifth postoperative day. It is possible to feel a ridge under the suture line, called the “healing ridge,” which is produced by the newly formed collagen. If this ridge is not palpable, impaired healing is likely, therefore placing the wound at risk for disruption.¹²⁻¹³

Epithelialization is the next component in the proliferative phase.

Epithelial cells migrate, proliferate and differentiate to resurface on defect and can only work over a moist vascular wound surface.¹⁴ This fact was addressed in the work of Winter and then Hinman⁷, forming the basis for the concept of moist wound healing. Dry or necrotic wound surfaces thus impede epithelialization. In sutured wounds, epithelialization occurs concurrently with collagen synthesis, whereas in open wounds, epithelialization takes place after granulation tissue is formed¹⁴. The wound is made smaller in contraction phase by the mode of action of myofibroblast, thus establishing a grip on the edges of the wound. A large wound can become 40-80% smaller after contraction.

TISSUE REMODELLING

The maturation and remodeling phase can continue over 1 year to reinforce the scar. Collagen fibers in non-wounded area have the typical basket weave appearance. The collagen produced in wounded and scarred skin is biochemically different from that produced in non-wounded skin and is parallel to the skin. The repaired scar requires time to strengthen.¹⁵

Studies have shown that after 1 week, the strength of the scar is only 3% of normal skin, after 3 weeks the strength is 20% and after 3 months 80%, thus scar tissue is never as strong as non-wounded tissue.¹⁵

Forms of Healing

Types of wound healing are divided into primary, secondary and tertiary “intention”. First intention (primary) healing occurs when the tissue is cleanly incised and wound that are immediately healed by simple suturing, reapproximated and repair occurs without complication.

Healing by secondary intention occurs in open infected wounds through the formation of granulation tissue. Granulation tissue is the red, granular, moist tissue that appears during healing of the open wounds. Microscopically it contains new collagen, blood vessels, fibroblasts and inflammatory cells, especially macrophages. Healing eventually occurs by re-epithelialisation and wound contraction. Most burned tissue and infected wounds heal by the way of secondary intention.

Healing by tertiary intention is also called delayed primary closure. Here the contaminated wound is treated with repeated debridement till the infection is controlled and then surgical intervention like graft placement or secondary suturing is done.

Table - 1: Growth factors and cytokines affecting various steps in wound healing.¹⁸

Macrophage chemo taxis	PDGF, FGF, TGF-beta
Fibroblast migration	PDGF, FGF, EGF, TGF-beta
Fibroblast proliferation	TNF,FGF,PDGF,EGF
Angiogenesis	FGF, Angiogenesis, VEGF
Collagen synthesis	PDGF,TGF-beta
Collagen secretion	PDGF, EGF, FGF, TNF,(TGF-beta inhibitor)

Impaired wound healing¹⁹

Of the many causes of defective wound healing, tissue hypoxia resulting from anaemia, peripheral vascular diseases, cardiopulmonary diseases, malnutrition and chronic inflammatory disorders are the major causes. A prior search into these problems is a must before surgery is undertaken.

The repair process is influenced by many factors including.

1. The severity and duration of exposure to the stimulus.
2. The tissue environment and the extent of the tissue damage.
3. Hypoxia and foreign bodies.

4. Drugs like corticosteroids and diseases that inhibit repair (diabetes in particular).¹⁹

MICROBIOLOGY

Staphylococcus aureus is the commonest organism causing wound infection. Several studies have noted healing of the wound was impaired in incisions inoculated with staph aureus²⁰. Wound healings were better with milder infections (Gram negative organisms).

Bacteria of surgical interest

Bacteria of surgical interest, which are encountered in SSIs frequently, are discussed here. Bacteria that cause SSIs frequently are staphylococci, streptococci, and the enterobacteriaceae. A few of them are described here.

Staphylococcus: They are gram positive, either aerobic or facultative anaerobic cocci with staphylococcus aureus being the most common species. The organism is found in the nose and throat of 30% to 50% of healthy carriers. Antibiotic resistant hospital strain of S.aureus may be carried in the nose, throat and on the hands of hospital staff.

Staphylococcus aureus: elaborates toxins like leucocidin, hemolysin, enterotoxin, fibrinolysin, hyaluronidase, lipase, nuclease and protease. In addition, non-toxic substances like coagulase are produced

that help in the invasion of bacteria. Today, multi-drug resistant staphylococcus aureus is probably the most severe cause of SSIs, which has to be dealt with.

Streptococcus: They are Gram-positive cocci, either aerobic or facultative anaerobic or a few species even being anaerobic.

Streptococcus pyogenes: They may be facultative anaerobic. One of the commonest bacterial pathogen of humans, it is an invasive microorganism and secretes two distinct hemolysins (streptolysin O and S) and several other products which aid in invasion. The streptokinase and hyaluronidase produced by most strains of S.pyogenes are responsible for spreading cellulitis. When an abscess forms, the pus is watery and often blood stained due to the action of these enzymes. Infection of surgical wounds, burn wounds may lead on to entry of these bacteria into the blood stream, leading on to septicemia which is often fatal.

Enterobacteriaceae: this is a family of inter-related gram negative bacilli isolated from the intestinal tract and has pathogenic members like Escherichia coli, Klebsiella, and proteus, commonly found as intestinal commensals. These commensals usually cause urinary tract infections, SSIs, infections of the biliary tract in the post operative period and commonly are the yield in infected burns and wounds.

Escherichia coli: These non-capsulated, motile, aerobic, and facultative anaerobic bacilli are found as intestinal commensals in humans. The organisms enter the intestine shortly after birth and persist throughout one's life. These bacilli are concentrated in the ileo-caecal region and diminishes up to the duodenum proximally and rectum distally. These bacteria serve a useful function by synthesizing B-complex vitamins and also by suppressing the growth of certain proteolytic organisms. However these are one among the common organisms that cause a myriad of infections including SSIs, appendicitis, cholecystitis, peritonitis and urinary tract infections.

Klebsiella: These are gram – negative aerobic (or facultative anaerobic), non-motile and capsulated. Found on mucous surfaces of the upper respiratory tract, intestines and the genitourinary tract. Along with other gram-negative bacilli, they have assumed increasing importance as a cause of nosocomial infections. They are known to cause endocarditis, septic thrombophlebitis, septicemia, wound infections, crepitant cellulitis, and myonecrosis. Klebsiella pneumonia causes severe pneumonia in debilitated patients.

Pseudomonas aeruginosa: These are actively motile, gram-negative, and strictly aerobic bacilli found in the intestines of humans and animals, sewage, water and soil. As frequently secondary invaders, they

produce inflammatory and suppurative lesions in humans; the purulent discharge produced usually being greenish-blue in color with a characteristic sweetish odour. Resistances of these organisms to the common groups of antimicrobial agents used now are frequently met with in hospital settings. As such, owing to its resistance, it has become one of the front-runners amongst drug resistant bacteria to cause fulminant septicemia owing to secondarily infected burn wounds, SSIs, urinary tract infections and respiratory infections in mechanically ventilated patients.

Fungi of surgical interest

For ages, fungi have been neglected and treated with impunity by physicians and surgeons alike. However, these groups of microbes now seem to draw everyone's attention and a detailed knowledge of them is now a must, as fungal infections are now not only notoriously common in surgical scenario but also increasingly fulminant. This renewed fungal pathogenicity can be attributed to the increase in number of immunocompromised patients as a whole and increase in numbers of such people being subjected to surgery.

Fungal isolates are now increasingly common in abscesses of wound infections with sterile culture yields.

Histoplasma capsulatum, *Cryptococcus neoformans*, and

Coccidioides immitis, Aspergillus, Rhizopus and Mucor cause opportunistic infections. Dreaded amongst the fungi, however is the candida species. Candidiasis is an opportunistic endogenous infection, the commonest being in diabetes mellitus.

Microbial factors of importance in the development of infection

Size of the inoculums and nature of the microbe²²

CFU represent the size of microbial inoculum during infection. Source of microbes can be endogenous or exogenous. The important determinant in the development of SSIs is the rate of proliferation of microbes in a specific environment. Pathogenic microbes are those that are capable of causing disease and those that cause severe infection consistently are termed “virulent”. Certain microbes though not inherently virulent, acquire virulence when there is disruption in or suppression in host defenses.²²

Virulence and pathogenicity

Refer to the ability of a microbe to produce disease or tissue injury. A thin line of difference separates the two terms. “Pathogenicity” is generally employed to refer to the ability of a microbial species to produce disease, while the term ‘virulence’ is applied to the same property in a strain of microorganism.²²

Virulence of a microbe is sum total of several determinants, as

listed below:

- a. Adhesion
- b. Invasiveness
- c. Toxigenicity
- d. Communicability
- e. Bacterial products and appendages
- f. Infecting dose
- g. Route of infection

Rate of microbial proliferation

Faster the proliferation, higher is the chance of infection.

Quantitatively, it has been shown that if a surgical site is contaminated with more than 10^5 microorganisms per gram of tissue, the risk of SSIs is significantly increased.

Once a portal of entry is established (e.g. as at a surgical site or via an indwelling catheter), resident host defenses act and attempt to eliminate microbes that are present¹⁷ and if the initial barrier fails, additional host defenses are recruited to the portal of entry of the microbes.

The defenses consist of the following factors:

- a. Physical barriers and host micro flora
- b. Sequestration mechanisms
- c. Immune mechanisms

Physical barriers and host micro flora²²

The initial line of host defense against both exogenous and endogenous microbes is the physical or the anatomical barrier. The primary challenge to the surgeon is the endogenous microflora, which usually forms the major source of SSIs. More important than that is the fact that these microbes are easily amenable to be sterilized before barrier disruption takes place by the usage of topical microbicides, intraluminal antiseptics, and or AMP(anti-microbial prophylaxis), either topical or systemic.

The first and the foremost amongst the physical barriers is the integument. Of course, it is the integument which we are more concerned when dealing with the SSIs. Integument is the largest organ in the human being, being expansively spanned and having a dry weight of about 4 kilograms. Integument also acts as the largest interface between the external microbial milieu and the internal milieu of the host. It provides for much more than a mechanical barrier. The healthy skin possesses bactericidal activity to which the presence of high concentration of salt in the drying sweat, the sebaceous secretions and the long chain fatty acids

and soaps contribute.

Though the skin frees itself readily of micro flora deposited on it (transient), its reactions are different to the bacterial flora normally resident on it. Even washing and application of disinfectants do not easily remove resident flora.

Hence it is important that the resident flora is kept to a minimum before deliberate wounding or breach of this vital barrier occurs.

Infection at the surgical site may also occur as a consequence of microbial invasion at other barrier sites and subsequent dissemination and seeding at the surgical site.

Sequestration mechanisms²²

Host defenses first attempt to kill all microbes. It is further augmented by influx of inflammatory fluid that contains amongst many other substances like fibrinogen. Fibrinogen polymerizes to fibrin to trap the bacteria in the extra cellular milieu.

Omentum acts as the policeman of the abdomen and reaches the site of inflammation at the earliest and seals the site from other relatively healthier sites of the abdomen. This along with paralytic ileus and intestinal distension serves to protect from infection.

Sequestration mechanisms on the other hand also acts as a double

edged sword, on one hand limiting the focus of infection and on the other by preventing resident and recruited host defenses to reach the site of inflammation by walling off the later.

This invariably leads to the formation of the abscess. However sequestration is in a way an advantage as it converts dangerous, life threatening infections into chronic varieties which can be tackled subsequently.

Immune mechanisms²³

Immune mechanisms are essentially represented by the humoral and cellular immunity. Humoral immunity is so termed as its components circulate within blood and body fluids as proteins, and consists of two components namely the antibodies (immunoglobulin) and the complement. These antibodies are produced by B lymphocytes in response to the presence of substances including microbes that the mammalian host recognizes as a foreign antigen and part of itself. They are activated in a sequence generally triggered by binding certain types of antibodies to microbial antigens (especially the IgM variety). This activated complement aids cellular immunity.

Cellular immunity comprised of the T lymphocytes of different clonal varieties receives the initial load of antigens (microbial or

otherwise) and phagocytose them for further killing. Further killing of the microbes is usually via lysis as governed by multiple mechanisms including the bacterial degradation by vacuolation and by release of oxygen free radicals. Cellular immunity generally is triggered within 2 to 4 hours of microbial inoculation (in this instance, after the incision is made) into the tissues and it is this lag period that a surgeon should guard and cover by means of antimicrobial prophylaxis (AMP) whenever justified.

The cellular immunity is influenced by multiple factors, innate or acquired. Cytokines, like the interferon's, tumor necrosis factors, and interleukins offer innate co-ordination of cellular immunity. They further aid to regulate the host defenses via the suppression and augmentation of specific defense components, including their own activity (by feedback regulatory mechanisms). This may act as a double-edge sword if mediators of these antigen-toxic immune mechanisms "Spill on" to damage the normal cells, as hazardously demonstrate in the sepsis syndrome where it is these mediators which cause much damage to the tissues than the infectious agent or its products per se.

The acquired factors governing cellular immunity include the previous exposure of antigenic material (as in immunization), immune-compromised status like as in diabetes mellitus, malnutrition, AIDS and

long term steroid therapy. In summary, immune mechanism is the “cog in the wheel” in prevention of infections, at surgical site.

Risk Factors for Post Cesarean Wound Complications¹¹

Patients characteristics	Operation characteristics
Obesity	Scrub
Diabetes Mellitus	Skin antiseptics
Chorioamnionitis	Pre operative shaving
Post operative endometritis	Preoperative skin preparation
Prolonged rupture of membranes	Duration of operation
Severe Anemia	Antimicrobial prophylaxis
Stress—physiologic or psychologic	Foreign body in surgical site
Smoking	Poor surgical technique
Anticoagulant therapy	Surgical drape

Diabetes Mellitus

High blood glucose inhibits the immune response that fights against bacterial and fungal infections.²⁴

Diabetics have 5 times the risk of infection of non diabetics even with clean incisions.²⁵ The explanation for the difference in wound healing is complex. The disparity starts with alterations in the

inflammatory response generated by injury or incision. These differences in enzyme secretion and growth factor affect all the aspects of normal wound healing such as collagen synthesis and deposition, leukocyte function and tissue perfusion.¹¹

Obesity

Obesity is a major risk factor for post caesarean wound complications²⁶. Serous fluid collection, poor vascularity of subcutaneous fat and hematoma formation in obese women interferes with the healing process.²⁶

Cetin and cetin found that the wound disruption rate increased significantly with thickened subcutaneous tissue greater than 2 cm had a wound disruption rate of 27.2% compared with 18.7% of controls.²⁷

Dead space can be obliterated by the closure of excess subcutaneous tissue thus reducing the formation of seromas.²⁸

Chorioamnionitis

Tissue infection and clinical circumstances that predispose to infection comprise the other major reasons for suboptimal wound healing.

Specifically prolonged labours, prolonged rupture of membranes and frequent “vaginal examination” is all known risk factors for increasing the rate of infection. The intra-uterine environment during labour can

tremendously impact post partum healing.²⁹

Corticosteroids

Patients on chronic corticosteroid therapy are especially at risk for poor wound healing. Corticosteroids increase the risk of infection by suppressing inflammation, inhibiting leukocyte function, retarding wound contraction, decreasing collagen matrix deposition and delaying epithelialization.³⁰

Stress both physiological and psychologic has a deleterious impact on wound healing patient reporting higher stress had significantly lower levels of interleukin-1, Interleukin-6 and matrix metalloproteinase-9. Stress also causes endogenous hypercortisolemia from the sympathetic stimulation of adrenal glands to release their glucocorticoid steroid reserves, which blunts the inflammatory phase of wound healing. There is some evidence that psycho educational therapy and acupuncture could reduce stress and reduce the risk of wound complications.³¹

Nutrition

Nutrition and nutritional supplementation to improve wound healing has been written about extensively, especially in the area of chronic wounds. Many recommendations have been made particularly with regard to vit C, vit A and zinc. Adequate nutrition does seem

essential to proper wound healing.³²

Surgical procedures increase protein requirements. Vitamin is necessary for collagen synthesis, capillary wall integrity, fibroblast function & immunologic functions. Vitamin C deficiency can delay wound healing, although there is no strong evidence for supplementation in patients who do not have scurvy.³³

Zinc supplementation for accelerating wound healing has been studied. Low serum Zinc levels have been associated with impaired healing. Zinc aids collagen formation and supports immune function.³⁴

Vit. A increases the number of monocytes and macrophages and stabilises the intracellular lysosomes of WBC. Vit. A has also been shown to accelerate collagen production in animals.³⁵

Hypothermia

It has been hypothesized that mild peri-operative hypothermia (defined as 2°C below the normal core body temperature of (36.5°C) can promote post-operative wound infection by causing vasoconstriction and impaired immune function.³⁶

Operative characteristics:

1. Preoperative factors

A. Pre-Operative Antiseptic Showering

A study involving more than 700 patients who received two preoperative antiseptic baths revealed that chlorhexidine reduced bacterial colony counts on the skin by nine fold, while povidine iodine or triclocarban medicated soap reduced colony counts by 1.3 and 1.9 folds respectively.³⁷ Chlorhexidine based antiseptics needed to be used several times to attain this maximum microbicidal effect. However, reductions of skin's microbial colony counts pre-operatively have not definitely yielded a reduction in SSIs rates.

Further studies need to be undertaken to establish the role of antiseptic showering preoperatively. There is no current recommendation as to whether preoperatively with or without antiseptics, definitely seem to reduce the incidence of SSIs especially on tropics.

B. Pre-operative Hair Removal

Pre-operative shaving of the operative site, the night before surgery is associated with higher rates of SSIs risk than either the use of depilatory agents or no hair removal. In a study SSIs rates were 5.6% in patients who had hair removal by razor shave compared to 0.6% rate among those who had hair removed by depilatory agents or who had no hair removal.³⁸ Shavings immediately before the operation compared to shaving within 24 hours preoperatively was associated with a decreased SSIs rate (3.1% Vs 7.1%) and if shaving was performed more than 24

hours prior to operation also has been associated with a lower risk of SSIs than shaving or clipping night before operation (SSIs rates immediately before = 1.8% Vs night before = 4%)³⁹ Depilatories though present with lowest SSIs risk than clipping or shaving is known for its hypersensitivity reactions.⁴⁰

C. Patient skin preparation in the operating room

Many antiseptic agents are being used for preoperative preparation of the skin at the incision site.

The iodophors (e.g.povidine-iodine) alcohol containing products and chlorhexidine gluconate are the most commonly used agents. No studies have adequately assessed the comparative effects of these pre- operative skin antiseptics on SSIs risk in well controlled, operation specific studies.

The FDA defines alcohol as, having one of the following active ingredients: ethyl alcohol 60%to 95% by volume in an aqueous solution, or isopropyl alcohol 50% to 91.3% by volume in an aqueous solution. Alcohol has germicidal activity against bacteria, fungi, and viruses, but spores can be resistant.

There have been a lot of trials to ascertain the exact method of skin preparation. The guidelines that have been formulated by the FDA have been described below.

Skin is prepared by using antiseptics circling the incision site.

There are reports of modification to the proposed procedure of skin preparation, which include the following:

1. Drying off the antiseptic agent after skin preparation.
2. Using an antiseptic adhesive drape.
3. Preoperative painting using antiseptic.
4. Using a sterile surgical preparation kit.⁴²

D. Preoperative hand and forearm antisepsis

All the members of the surgical team handling the instruments must do surgical scrub. Antiseptic agents commercially available for this purpose contain alcohol, chlorhexidine, iodine or iodophors, parachlorometaxylenol, or trichlosan. Alcohol is considered as the gold standard for surgical hand preparation all over the world.⁴³ the only concerns raised by the usage of alcohol are the flammability and skin irritation. Povidine iodine and chlorhexidine gluconate are fast catching up as better alternatives to alcohol. Chlorhexidine in an alcohol base (alcoholic chlorhexidine – 70% isopropanol with 0.5% chlorhexidine gluconate) was found to have the greatest residual antimicrobial activity.⁴⁴

However, not one single agent has been proven ideal in every

situation and the major factor, apart from efficacy of any antiseptic scrub was the acceptability of the operating room personnel after its repeated usage. To this date, no major study has surfaced which has measured the impact of different surgical scrubs on the SSI risk. All Meta –analysis however, have been focused towards the effect of these scrubs on the reduction of bacterial colony counts. A meta-analysis towards the former effect is strongly desirable before a definitive conclusion is arrived at, as far as the antiseptic scrub of choice is concerned.

Not only does the antiseptic agent influence the effectiveness of the surgical scrub, but scrubbing technique, the duration of the scrub, the condition of the hands, or the techniques used for drying and gloving are examples of other major contributory factors for their efficacy.

The conclusions derived from recent studies point that scrubbing for two minutes is perhaps as effective as a traditional ten minute scrub in reducing hand bacterial colony counts. However the CDC or the FDA has set no guidelines, as far as the ideal scrub time is concerned.

The current method of scrubbing as advocated in many studies is described here. The first scrub of the day should include a thorough cleaning underneath the finger nails (usually, if required with a brush). Such cleanings may not be necessary for the subsequent scrubs during the day. Brush should not be used to scrub any other part of the skin, as

desquamation of the superficial layers of the skin may ensue with the surfacing of sub-epithelial bacteria with paradoxical increase in bacterial colony counts after the scrub. Scrub should include the forearm, and extend beyond the elbow. Wash should commence from the hands and down to the elbow, and never in the reverse direction.

Sterile towels must be used for drying the hands and the forearms, before the wearing of a sterile gown and gloves.

Sterility of the operating personnel is not entirely dependent on the scrub. Their personal hygiene should be up to the mark. They should not have long or artificial nails (as they may cause inadvertent tear in the gloves). The role of jewellery or nail polishes by surgical team members is still a matter of conjecture.⁴⁵ However, with holding both seems to be a better alternative. Immediate preoperative showering of the surgical personnel, a popular and a once strongly recommended routine, especially for major cardio-thoracic and neuro-surgical procedures have now been strongly abhorred as it has been noted in multiple, validated studies that immediate preoperative showering increased the surface bacterial colony counts and may indirectly contribute to increases in SSIs risk. No increase in bacterial colony count was noted if the last shower was taken two hours before the proposed procedure. Though most of these studies have been extensively performed, the studies have oriented and limited themselves to measurement of the bacterial colony counts and

the casual relationship of these factors to the actual SSIs risk needs to be ascertained.

E. Management of infected or colonized surgical personnel.

Surgical personnel who have active infections or are colonized with certain micro-organisms have been linked to outbreaks or clusters of SSIs.⁴⁶ Thus it is important that the institution implements strict guidelines and policies to prevent transmission of microorganisms from personnel to the patients.

F. Antibiotic prophylaxis⁹

Prophylactic antibiotics for caesarean section have been shown to reduce the incidence of maternal post operative infectious morbidity.

Many different antibiotic regimens have reported to be effective.

Antibiotic prophylaxis reduces risk of febrile morbidity, endometritis, wound infection, urinary tract infections (Gibbs 1980; Boggess 1996; Leigh 1999) and other serious post operative complications. It has been demonstrated that there is a reduction in the relative risk of endometritis and wound infection for women having elective caesarean section as well as those having emergency procedures (Padiallla 1983; Mohamed 1988).

It is not clear whether any one particular agent is the drug of choice. To

date Penicillin, Ampicillin, Ticarcillin, Piperacillin, Imipenam, Metronidazole, Gentamicin, Cefazolin, Cefuroxime, Ceftazidime, Cefotetan and Cefotaxime have been used for Caesarean section prophylaxis and all have demonstrated efficacy either alone or in combination with another drug.

Ideally such drug regimens should be

1. Proven effective in well designed prospective randomized, double blind clinical trials.
2. Active against the majority of pathogens like to be involved.
3. Attain adequate serum and tissue level throughout the procedure.
4. Not associated with the development of antimicrobial resistance.
5. Cheap.
6. Well tolerable.

In many respects pencillins and cephalosporins met these criteria. While some guide line recommend multiple doses of antibiotics, a single dose may be adequate. In many of the trials antibiotic were administered after the cord was clamped.

Multiple dose regimens are no way superior to single dose regimen. Furthermore single dose is likely to be less expensive.

2. INTRA OPERATIVE CHARACTERISTICS

A. Surgical attire and drapes

The term, “surgical attire” refers to scrub suits, caps/hoods, shoe covers, masks, gloves, and gowns. Experiments have demonstrated that live microorganisms are shed from the exposed skin, hair, and mucous membranes of the operating room personnel.^{3,47&48} Though no conclusions have been derived, it seems quite prudent that, usage of surgical attire reduces the exposure of the patient to microorganisms and exfoliative material from the operating room personnel and as well to protect surgical team members from exposure to blood, blood-borne pathogens (e.g, human immunodeficiency virus, hepatitis virus) and toxic exudates of the patient.

1. Scrub suits

The “uniform” worn by the surgical team members, often consisting of pants and a shirt comprises the scrub suit.

Policies for laundering, wearing, covering, and changing scrub suits vary greatly. However, the current recommendations include removal from the operating room of scrub suits that are penetrated by blood or other potentially infectious materials immediately, or as soon as feasible. The employees have not ascertained it as to whether the suits

need to be autoclaved or just washed, in a recommended laundry or allow laundering of the suits. Scrub suits need to be worn on immediate entry into the operating room and removed before leaving it.

2. Masks

The wearing of masks during operations is followed as recommended by Halstead. Further recommendations are that, masks be worn in combination with protective eye-wear, such as goggles with solid shields, or chin-length face shields, whenever such splashes, sprays, splatter, or drops of blood or other potentially infectious material may be generated and eye, nose, or mouth contamination may be reasonably anticipated.

3. Surgical caps/hoods and shoe covers:

Surgical caps prevent surgical field contamination by reducing the hairs shedding from scalp though this is disproven.⁴⁷

Wearing of shoes has never been shown to reduce the risk of SSI or decrease the bacteria counts on the operating room floor. Shoe covers, however, may protect the surgical team members from exposure to blood and other body fluids during a surgical procedure. Current recommendations; however are to wear all these apparel in situations where gross contamination can be anticipated from the surgical procedure

(e.g. orthopedic procedures and procedures for management of penetrating trauma cases).

4. Sterile gloves:

Sterile gloves minimize transmission of microorganisms from the hands of the team members to the patient and obviously confer protection to the team members from contamination of their hands by patient blood and body fluids. If the integrity of glove is compromised (as when it is punctured), the glove should be changed as promptly as safety permits. Double gloving, the smaller fitting glove over the larger is aid to further reduce the risk of SSIs and also reduce the hand contact of blood and body fluids, as compared to a single pair.⁴⁹

5. Gowns and drapes

Sterile surgical gowns and drapes are used to create a barrier between the surgical field and potential sources of bacteria. All surgical team members wear gowns and drapes are placed over the patient. The actual relationship of these gowns and drapes vis-à-vis SSIs risk need to be evaluated though it is a ritual to drape the patient before any kind of surgical procedure.⁵⁰

Gowns and drapes come in varieties of packages and with multiple fringe benefits. Regardless of the nature of material used to prepare these,

they should be impermeable to viruses and liquids. Such a liquid-proof material would not only be costly but also cumbersome as it prevents heat loss and hence suffocates the wearer.

Plastic drapes and special membranes (e.g. Opsite) have not shown to confer any added benefit and in fact, the usage of Opsite has been associated with an apparent increase in the risk of SSIs, owing to transmigration of the surface bacteria from the edges of the membrane drape to the incision site.

ASEPSIS AND SURGICAL TECHNIQUE

1. Asepsis

Rigorous asepsis is the prime criteria of prevention of wound infection outbreaks. As already been mentioned, no amount of antimicrobial usage confers as much benefit, as does asepsis. Strict protocols have been laid on maintaining asepsis not only by scrubbed surgical team members but also by anesthesiologists and rotation nurses who are separated from the patient only by sterile drapes. Care must be extended to encompass asepsis in totality, which includes usage of sterile needles, infusion sets, sterile catheters, endotracheal tubes and other tubing's.

2. Surgical technique

Excellent surgical technique is widely believed to reduce the risk of SSIs. Such techniques include maintaining effective hemostasis while preserving adequate blood supply, preventing hypothermia, gentle handling tissues, avoiding inadvertent entries into hollow viscus, removing devitalized (ex. necrotic or charred) tissues, using drains and suture materials appropriately managing the postoperative incision.

Any foreign body incites inflammation and a subsequent risk of SSIs. Hence, extraordinary care must be taken in choosing the suture materials and drains. In vogue, monofilament suture materials seem to have lesser propensity to cause SSIs while the polyfilament variants encourage bacterial proliferation by harboring them in the crevices between two filaments and hence translate into increase risk of SSIs. Drains in general tend to increase the risk of SSIs.⁵¹ Hence; drains should be avoided and used only when absolutely necessary. The nature of drain also dictates to the risk of SSIs and it has noted that closed suction drains, placed distant to the actual site of incision, not only effectively evacuate postoperative hematomas and seromas, but also contribute to least addition to the risk of SSIs. Drains left in place beyond 72 hours are known to independently contribute to an added risk of SSIs and hence, drains must be removed as soon as its purpose is served.

Hypothermia defined as a core body temperature less than 36⁰c,

may result from general anesthesia, exposure to cold, or intentional cooling such as in cardiac and neurosurgical operations. In a study on colorectal surgeries, hypothermia caused increased risk in SSIs. Hence, both hypoxia and hypothermia need to be guarded against, for producing a reduction of SSIs.

3. Postoperative issues.

A. Incision care

Most clean surgeries result in a well healed incision at the end of 48 hours, if was closed by primary suturing, which in turn is common mode of closure in such cases. It is still unclear whether sterile dressings placed at the end of surgery need to be replaced or can be removed at the end of this period. However, the current thinking is to leave the incision site open to air, let the patient bath and to keep the site dry. However, if a delayed primary closure of the wound has been done or if the wound is left open for secondary suturing, sterile moist gauze and a sterile dressing, are placed to cover the surgical site, and should be achieved by using sterile techniques. The role of antiseptics and topical antimicrobial agents in reducing the risk of SSIs is debatable and no study has proven beyond doubt the benefit of these medicated dressing over moist, non-medicated dressings.

Persistence of sutures or staples beyond reasonably expected

duration also contribute to an increase in the risk of SSIs and hence, sutures or staples must be removed at the earliest possible as dictated by the healing of the tissues and the site of surgery, again using the sterile techniques.

B. Discharging the patient

An early discharge of the patient must be planned, especially in clean surgeries, most of which qualify to be considered as day care surgeries. Discharging the patient means a reduction in the hospital stay of the patient and hence a lesser chance of acquiring nosocomial infections and also that there is lesser expenditure by the exchequer on the treatment of the patient. Sadly on the other side, it also means that the surgeon loses the privilege of monitoring the patient's recovery as a whole and occasionally, a delay in managing the complications when the patient fails to reach the health care setup on time.

The negative aspects of the coin are truer in a setup like ours where ignorance and illiteracy confound ailments. Hence, a careful, proper planning is warranted for every discharge made prematurely, before the sutures are removed.

The patient is educated on wound care, educated about the signs and symptoms of SSIs, and also instructed to report to the nearest doctor

or reach the treating hospital in case any of them crop up during convalescence. The bottom line is that the intent of discharge planning is to maintain the integrity of the healing incision.

PREVENTION OF SURGICAL SITE INFECTIONS

In general, however, there are three main aspects to prevention of infection.

1. Careful, neat and gentle surgery.
2. Minimizing contamination during and after surgery
3. Improving patient's defenses, with the use of prophylactic antibiotics whenever necessary.

The standard approaches to decrease the risk of post operative abdominal wound infection include limiting the duration of pre operative hospitalization when possible, correcting malnutrition or anemia, stabilizing diabetes, decreasing steroids or immunosuppressive agents if possible, eradicating all infection such as urinary tract infection, proper preparation of skin, proper surgeons scrubbing, limiting operating room ventilation and air flow and using proper surgical technique.¹

Reduction of contamination during and after surgery encompasses the following measures:

1. Pre-operative skin preparation in the form of pre-operative

showering using topical microbicides and scrubbing the prospective surgical site.

2. Clipping of hair but avoidance of injury to the skin of prospective surgical site.
3. Scrubbing of hands and forearms of the surgeon and patient's skin preparation, both using topical microbicides, immediately before the procedure.
4. Instrumental sterilization and avoidance of breach in aseptic techniques.

Prophylactic antibiotics are indicated whenever wound contamination during the operation can be predicted to be high (e.g. operations on the colon).¹⁹

Excessively liberal use of antibiotics is not reasonable. The incidence of postoperative infections in clean operations is not diminished by administration of antimicrobial agents and the prophylactic use of these drugs must be reserved for selected cases at high risk of infection.¹⁹

The surgeon, who traumatizes the tissue, leaves foreign bodies or hematomas in wounds, uses too many ligatures, and exposes the wound

to drain or pressure from retractors, is exposing patients to needless risks of infection.

The purpose of sutures is to approximate tissues and hold them securely, and the right number is to use as few as will accomplish this aim. Since sutures strangulate tissues, they should be tied as loosely as the requirement of approximation permit. Subcutaneous suture should be used rarely. Using skin tapes instead of skin sutures or staples lowers infection rates, especially in contaminated wounds.

Severely contaminated wounds in which subcutaneous infection is likely to develop are best left open initially and managed by delayed closure. This means that the deep layers are closed while skin and subcutaneous tissue are left open and dressed with sterile gauze, inspected on fourth or fifth day, and then closed (preferably with skin tapes) if no sign of infection is seen. Scarring from secondary intention is usually minimal.

WOUND MANAGEMENT

Haematomas & seromas are commonly observed after a caesarean delivery. These types of situations required manual opening of the wounds to allow drainage after infection has been treated and all of the haematoma/ seromas evacuated .An open wound can be managed in 3

ways :

1. Secondary closure

2. Secondary intention with dressings.
3. Secondary intention using negative pressure wound therapy¹¹

Secondary Closure

It can be performed once a wound is free of infection or necrotic tissue and has started to granulate. This procedure, which may be performed at the bed side using local anesthesia or sedation, is done within 4 days after evacuation or disruption of hematoma or seroma. A wound cleanser is first needed to prepare the area and then a polypropylene mattress suture is used to close the skin & subcutaneous tissue enbloc. The sutures are removed 7 days after reclosure.⁵²

In study by Dodson et al, patients who were managed with secondary closure required 17 days to heal. But when, patients were allowed to heal by secondary intention took 61 days to complete wound healing. Wound healed on average 7 weeks sooner in the secondary closure group.⁵³

Healing by Secondary Intention using Dressings

Healing through secondary intention has historically been the most common way to manage wound disruption.⁵³

MANAGEMENT OF SUPERFICIAL WOUND BREAK DOWN

Superficial wound separation can be managed by widely opening the wound followed by local care to promote granulation formation and closure by secondary intention. Nowadays treatment is mainly by daily dressings to promote granulation tissue followed by secondary suturing.

The principle in treating wound breakdown is thorough debridement to promote the healing process. Then perform moist-to-dry dressing changes using saline soaked gauze every 8 hours. Also, the presence of significant bacterial contamination or necrotic tissue impedes wound healing. The wound is inspected and daily debridement is done. No antibiotics are given without a specific indication. Patients are allowed to bath and can wash the wound while bathing. Generally, during the ensuing 3 to 5 days the wound will be covered with healthy granulation tissue. At this point most patients can safely carry out the remainder of their care with family assistance, teaching, and medical supervision and assessment at regular intervals. In the proper setting this should represent no increased risk to the patient and allows subsequent recovery at home. In general it is impossible to distinguish the resultant scar at 6 months after surgery from the wound that remained intact after primary closure.

In most patients now delayed reclosure of the disrupted wound is performed. Several authors have described and refined this technique in the gynecologic literature.^{52,56} Based on earlier observations dating to

traumatic combat-associated wounds, the concept that clean wounds could be reclosed with a high success rate was studied. Walters et al showed a success rate of 85% in 35 disrupted abdominal incisions when they were surgically reclosed. Compared with the control group patients, who received wound care and closure by secondary intention, closure times were reduced from 71.8 days to 15.8 days. Dodson et al.^{55, 56} subsequently refined the closure technique to avoid the use of the operating room or regional anesthesia and intravenous sedation, and described the evolution of a procedure that could be performed at the bedside. Progressing from deep enbloc closure of the subcutaneous tissues and skin to the description of a technique of superficial skin closure, the authors reported a success rate of 94% when wounds were reclosed after superficial wound separation.

Dodson et al study of bedside approach using a local anesthetic is well tolerated by many patients and no patient required more than 6 days of wound care before secondary suturing with mean time of 4 days.

After local wound care is begun and healthy-appearing granulation tissue is found (which is generally less than 4 days from opening), a decision is made to perform reclosure. Risk factors for recurrent wound separation are poor hygiene, uncontrolled diabetes, and presence of

coagulase – positive gram-positive cocci are dealt and considered as exclusion criteria. If appropriate, the wound is closed under local anesthesia with strict aseptic precautions. Then use the technique of Dodson et al for closure using 2-0 proline sutures. The sutures are removed 10 to 14 days later.

Management of Fascial Dehiscence

Fascial dehiscence is a rare complication mainly due to failure of technique. Multiple patient and surgical factors contribute to this process depending on the patient's conditions, the available resources, and the experience of the surgeon.

Dehiscence with evisceration needs an immediate replacement of abdominal contents using saline soaked towels followed by abdominal binder.

Primary repair of fascia is done if tissues are healthy or else retention sutures for all layers using monofilament suture is done. Interrupted sutures are preferred. The delayed reclosure technique is simple as described above and can be applied in appropriate patients.⁵⁷

Late dehiscences have also been encountered in some patients that in actuality probably dehisced at some earlier time into the subcutaneous tissues. At a later time, the patient then presents with evisceration.

Misconception of Wound Healing:

It is important to describe several historical tenets of wound care that are outdated. Many studies have documented that the use of products such as Povidone iodine, Daikens solution, iodophor gauze & hydrogen peroxide. The use of these products can delay wound healing. Irrigation with normal saline or commercial wound cleansing solutions, which do not contain any of the aforementioned components, will adequately remove surface bacteria without disrupting the beneficial physiological process.⁵⁸

Another myth is that moist wounds are more prone to delayed healing because they are more likely to become infected or break down and that keeping a wound dry promotes healing. But moist wounds heal by causing fewer traumas to the viable tissue.⁵⁹

In wet to dry dressing, saline soaked gauze is allowed to dry and then removed. This causes new tissue, which had adhered to the gauze, to be pulled away, consequently destroying healthy tissue. This technique is more appropriate for necrotic tissue debridement and its validity is debated by wound care experts who state that it should be used on very necrotic tissue and stopped when there is viable tissue.⁶⁰

Modern Wound Care Dressing

Dressing selection should optimize the wound bed by decreasing

the risk of infection, removing necrotic tissue, managing exudates, eliminating dead space and maintaining wound temperature.⁶¹

1. The risk of infection can be reduced by using a non-toxic solution to cleanse the wound.
2. Necrotic tissue can be removed either surgically or enzymatic ally.
3. Drainage can be managed by using absorbent material. Calcium alginate and foam are examples of 2 newer materials used on wound care that are highly absorbent and have been shown to be less painful during dressing changes than gauze.⁶¹

Vacuum assisted closure

Negative pressure wound therapy (NPWT) also known as vacuum assisted closure it uses controlled levels of negative pressure to assist and accelerate wound healing by evacuating localized edema with negative pressure. Bacterial colonization is reduced along with the evacuation of wound drainage.⁶²

Intermittent negative pressure causes a periodic release of cytokines & inflammatory factors important to the previously mentioned phases of wound healing.⁶³

Negative pressure also increases localized blood flow and oxygenation there by promoting a nutrient rich environment that stimulates granulation tissue growth.⁶⁴

Such cellular proliferation encourages angiogenesis, uniform wound size reduction and reepithelization.

This therapy has been used in chronic wound such as diabetic foot ulcers⁶⁵. The dressing used for negative pressure wound therapy is polyurethane foam that is trimmed to fit the entire surface of the wound. Once the foam is placed evacuation tubing is laid on top of the foam. A clear, adhesive dressing is placed over the foam and tubing to secure the unit to the wound site. The evacuation tubing has slits cut into the proximal end, which will evacuate the wound fluid into a collection chamber located on the computerized vacuum pump. The collection canister can be emptied as needed. Controlled negative pressure is then applied by the vacuum – assisted closure device, which is a small computerized pump (4 inches by 2 inches, weighing 2 pounds) with a rechargeable battery.

The tubing can be clamped and disconnected for short periods of time (no more than 2 hours at a time for a maximum of 6 hours per day).

Dressing changes are needed every 48 hours.⁶⁶

Closure of wound dehiscence by secondary intention can take months; their deep subcutaneous layer also makes secondary closure technically difficult to perform. NPWT ensures that subcutaneous wound environment remains free from seroma and hematoma formation, thus assisting in maintaining an environment in which healing is optimized.⁶⁶

AIM OF THE STUDY

A prospective analytical study done at Kilpauk Medical College Hospital from January 2013 to November 2013.

- To find the incidence of wound infections after caesarean section
- To study the association of risk factors in post caesarean wound infections like anemia, hypertension, diabetes mellitus, chorioamnionitis, PROM, obstructed labour, socio economic status, BMI, duration of surgery and type of skin incision.
- To evaluate important factors in the prevention of post caesarean wound infection.
- To find antibiotic sensitivity pattern of different organisms.

OBJECTIVES

The objective of the study is

1. To analyse the frequency of wound complications after elective and emergency caesarean section.
2. To find out the associated risk factors and the most common causative organism in wound complication.
3. To study the various treatment modalities in treating wound complications after caesarean section.

MATERIALS AND METHODS

- Study design - prospective analytical study
- Ethical committee clearance obtained in April 2013
- Place of study –LSCS and Labour ward in KMCH
- Duration of study - January 2013 to November 2013
- **Sample size** – 700 calculated by the formula

$$\text{Equation : Sample size } n = \frac{Z^2_{1-\alpha/2} \times p(1-p)}{d^2}$$

n = Sample Size

Z = Table Value (1.96)

d = constant (0.05)

p = Prevalence

INCLUSION CRITERIA:

1. All women delivered by caesarean section.

EXCLUSION CRITERIA:

1. All women who delivered vaginally.

METHOD OF COLLECTION OF DATA

A prospective study consisting of 700 patients undergoing lower segment caesarean section was conducted at Kilpauk Medical College Hospital, Chennai during the period of January 2013 to November 2013. Women

undergoing lower segment caesarean section including both elective and emergency caesarean section will be evaluated for entry in to the study. A

written consent was taken. Various risk factors like BMI, anemia, hypertension, DM, PROM, Chorioamnionits, Obstructed labour were taken into consideration.

Operative characteristics like duration of the procedure, type of abdominal incision, skin closure and their influence on wound infection was studied.

In post-operative period patients were monitored for signs of development of wound infection such as rise of temperature, nature of discharge from operative site, wound erythema and induration. Bacteriological studies were carried in wound infected cases. Wound complication were managed appropriately by using antibiotics, daily dressing or surgical resuturing.

STATISTICAL ANALYSIS

Our study included 700 patients undergoing lower segment caesarean section at Kilpauk Medical College, Chennai during January 2013 to November 2013.

The incidence of wound infections was determined. The incidence of wound infections in various risk factors like BMI, anaemia, chorioamnionitis, obstructed labour, PROM was studied. The impact of duration of operation, type of skin incision and skin closure on wound complication was also noted. The antibiotic sensitivity pattern for organisms isolated was also studied. The data were analysed using SPSS version 15. The variables were analysed using chi-square test.

INCIDENCE OF WOUND INFECTIONS

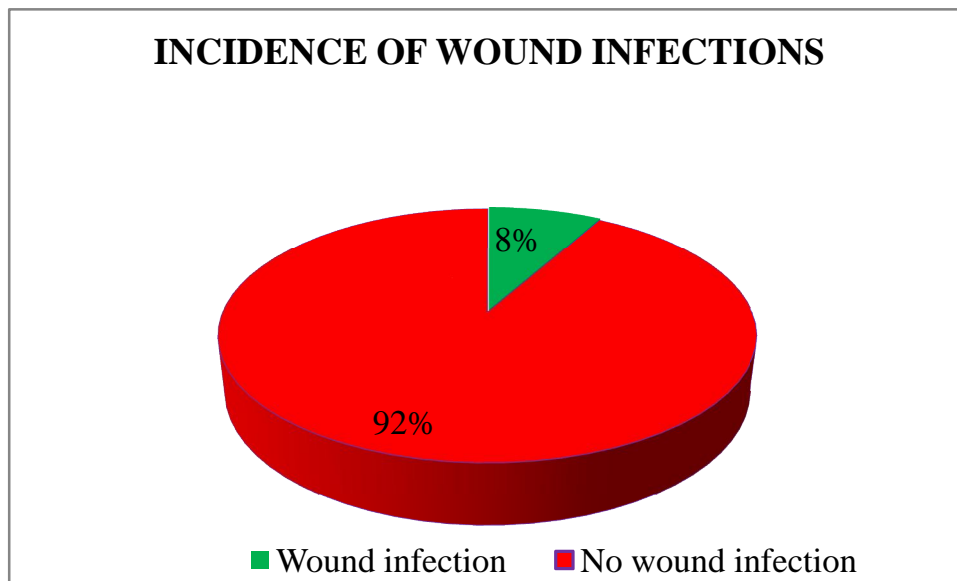
In our study of 700 patients, 57 cases developed wound infections which accounted for 8.14%.

TABLE - 1

INCIDENCE OF WOUND INFECTIONS

Complications	No. of cases	%
Wound infection	57	8.14
No wound infection	643	91.86
Total no of cases	700	100

FIGURE – 1



TYPE OF WOUND INFECTION

The various types of wound infections seen in the present study are superficial wound infection, superficial wound breakdown. The commonest type was superficial wound infection. None of the patients developed fascial dehiscence or hematoma.

TABLE - 2
TYPE OF WOUND INFECTION

Complications	No. of cases	%
Superficial wound infection	32	56.14
Superficial wound breakdown	25	43.85

FIGURE – 2
TYPE OF WOUND INFECTION

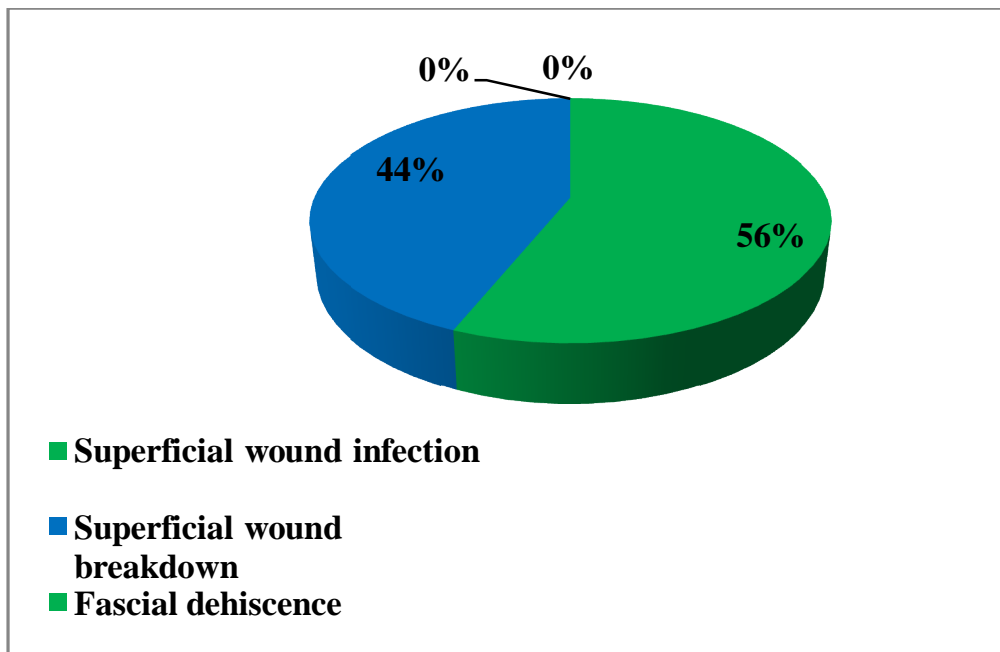


TABLE – 3
WOUND INFECTIONS WITH REFERENCE TO
SOCIOECONOMIC STATUS

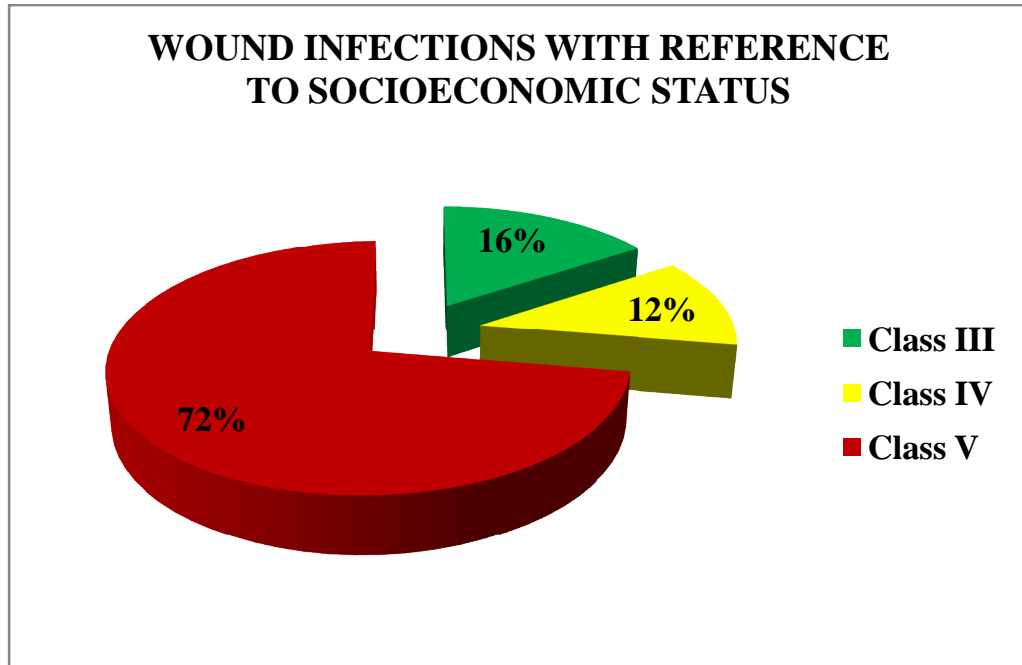
			WOUND INFECTION		Total
			No	Yes	
SE STATUS	3	Count	29	1	30
		% within SE STATUS	96.7%	3.3%	100.0%
		% within WOUND INFECTION	4.5%	1.8%	4.3%
		% of Total	4.1%	.1%	4.3%
	4	Count	352	9	361
		% within SE STATUS	97.5%	2.5%	100.0%
		% within WOUND INFECTION	54.7%	15.8%	51.6%
		% of Total	50.3%	1.3%	51.6%
	5	Count	262	47	309
		% within SE STATUS	84.8%	15.2%	100.0%
		% within WOUND INFECTION	40.7%	82.5%	44.1%
		% of Total	37.4%	6.7%	44.1%
Total	Count	643	57	700	
	% within SE STATUS	91.9%	8.1%	100.0%	
	% within WOUND INFECTION	100.0%	100.0%	100.0%	
	% of Total	91.9%	8.1%	100.0%	

It is demonstrated that 15.2% of the women from Socioeconomic status V had wound infection.

According to Pearson Chi-square test, Pearson chi-square value is 36.968 and p value is 0.000, statistically significant.

Lower socioeconomic status is a significant risk factor for wound infection.

FIGURE – 3



It is clearly shown that wound infection is common in low socioeconomic status.

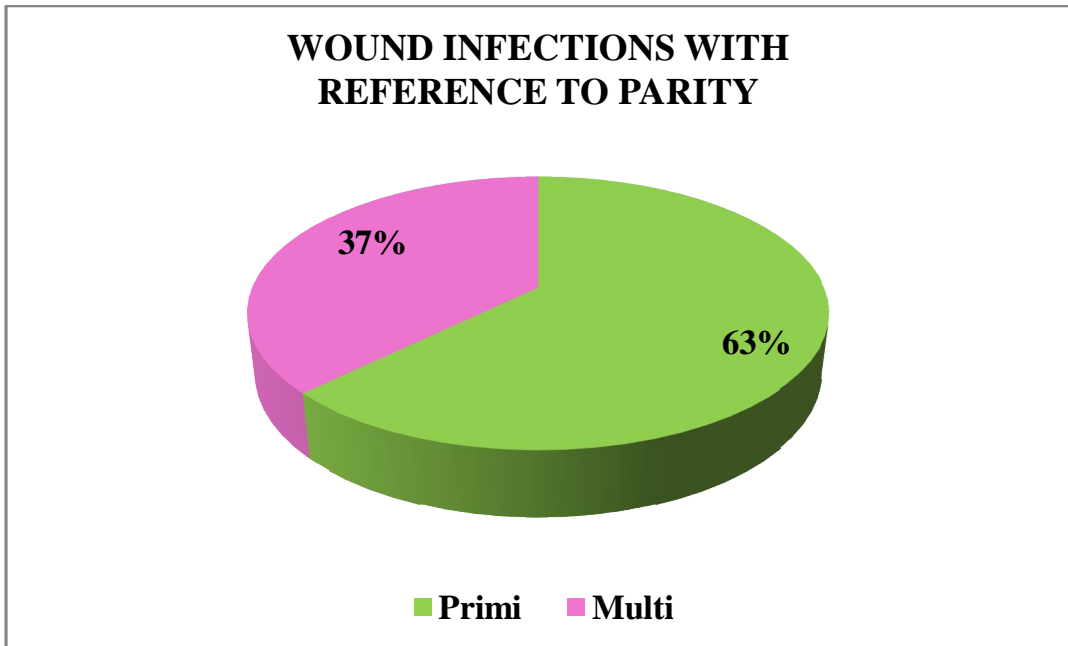
TABLE – 4
WOUND INFECTIONS WITH REFERENCE TO PARITY

			WOUND INFECTION		Total
			No	Yes	
PARITY	Primi	Count	271	32	303
		% within PARITY PRIMI-1 MULTI-2	89.4%	10.6%	100.0%
		% within WOUND INFECTION	42.1%	56.1%	43.3%
		% of Total	38.7%	4.6%	43.3%
	Multi	Count	372	25	397
		% within PARITY PRIMI-1 MULTI-2	93.7%	6.3%	100.0%
		% within WOUND INFECTION	57.9%	43.9%	56.7%
		% of Total	53.1%	3.6%	56.7%
	Total	Count	643	57	700
		% within PARITY PRIMI-1 MULTI-2	91.9%	8.1%	100.0%
% within WOUND INFECTION		100.0%	100.0%	100.0%	
% of Total		91.9%	8.1%	100.0%	

10.6% of the primi and 6.3% of the multi had wound infection.

According to Pearson Chi-square test Pearson Chi-Square value is 4.177 and p value is 0.041 statistically significant Primipara is more prone for wound infection.

FIGURE – 4



Primipara is more prone for wound infection.

WOUND INFECTIONS WITH REFERANCE TO AGE

AGE DISTRIBUTION

The below table represents age distribution of wound infection that have occurred in this study. 87.5% of the wound infections were seen in patients aged 31 – 35 years and 50% were seen >35 years.

According to pearson chi-square test, p value is 0.047, statistically significant.

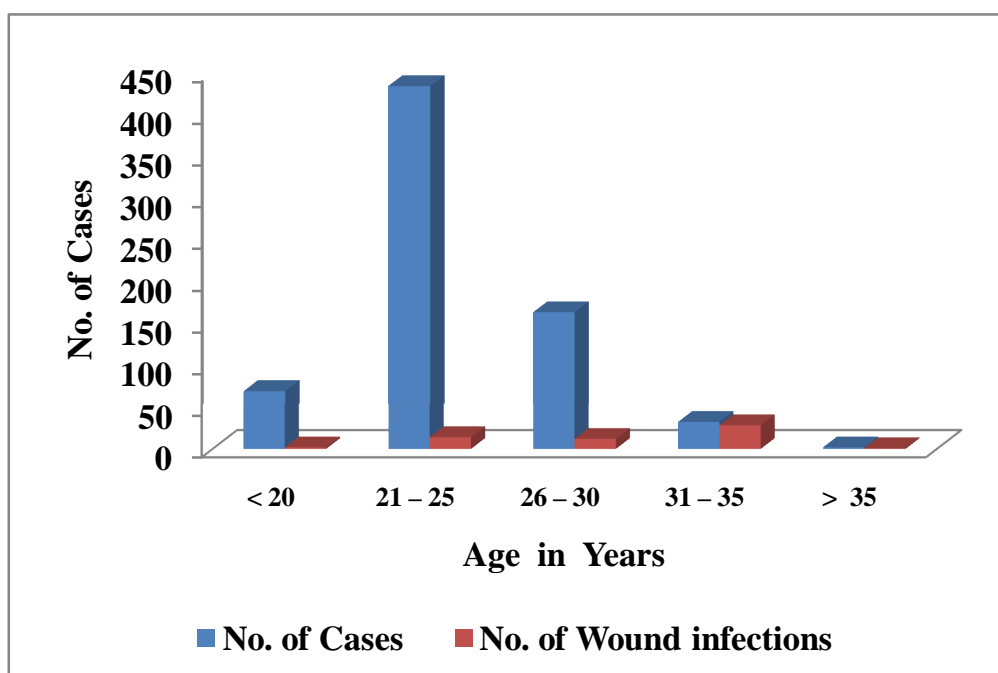
TABLE – 5

WOUND INFECTIONS WITH REFERENCE TO AGE

Age in Years	Total No. of Cases	Wound Infection		% of Wound Infection
		Yes	No	
≤ 20	69	2	67	2.89
21 – 25	434	14	420	3.2
26 – 30	163	12	151	7.36
31 – 35	32	28	4	87.5
> 35	2	1	1	50
Total	700	57	643	100

FIGURE – 5

WOUND INFECTIONS WITH REFERENCE TO AGE



Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means	
AGE	Equal variances assumed	3.955	.047	10.943	698
	Equal variances not assumed			8.962	62.302

Independent Samples Test

		t-test for Equality of Means		
		Sig. (2-tailed)	Mean Difference	Std. Error Difference
AGE	Equal variances assumed	.000	4.886	.447
	Equal variances not assumed	.000	4.886	.545

According to pearson chi – square test, p value is 0.047 statistically significant.

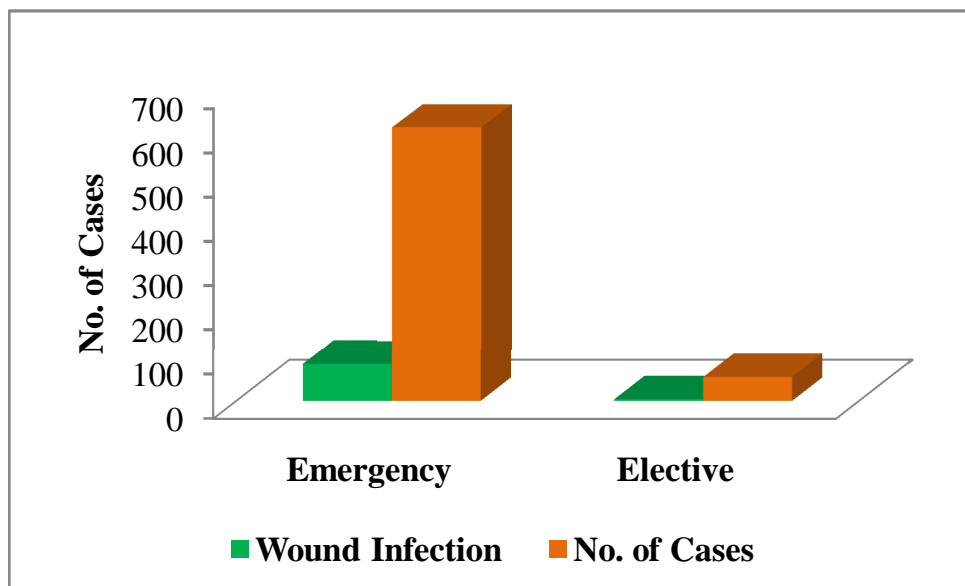
TABLE – 6

WOUND INFECTIONS WITH REFERENCE TO THE TYPE OF CAESAREAN SECTION

Type	Total No. of Cases	Wound Infection		%
		Yes	No	
Elective	82	4	78	4.8
Emergency	618	53	565	8.6
Total	700	57	643	

According to Pearson Chi-square test Pearson Chi-Square value is 0.382 and p value is 0.826, statistically insignificant.

FIGURE – 6
WOUND INFECTIONS WITH REFERENCE TO THE TYPE OF CAESAREAN SECTION



It is clearly shown that wound infection is more common in emergency LSCS.

TABLE – 7

**WOUND INFECTIONS WITH REFERENCE TO PATIENT
CHARACTERISTICS**

Characteristics	Total No. of Cases	Wound Infection		% of Wound Infection	Pearson Chi square Value	P Value
		Yes	No			
Anaemia	111	18	93	16.2%	11.495	0.001
Hypertension	127	13	114	10.2%	0.909	0.216
Diabetes Mellitus	93	10	83	10.8%	0.977	0.211
PROM	95	24	71	26.3%	43.112	0.000
Obstructed Labour	6	4	2	66.7%	27.712	0.000
Chorioamnionitis	3	2	1	66%	13.796	0.000

The various risk factors which contribute to the wound infections in this study are anaemia (16.2%), hypertension (10.2%) diabetes mellitus (10.8%), PROM (25%), more than half of those with obstructed labour, chorioamnionitis developed wound infections (66%).

FIGURE – 7

WOUND INFECTIONS WITH REFERENCE TO PATIENT

CHARACTERISTICS

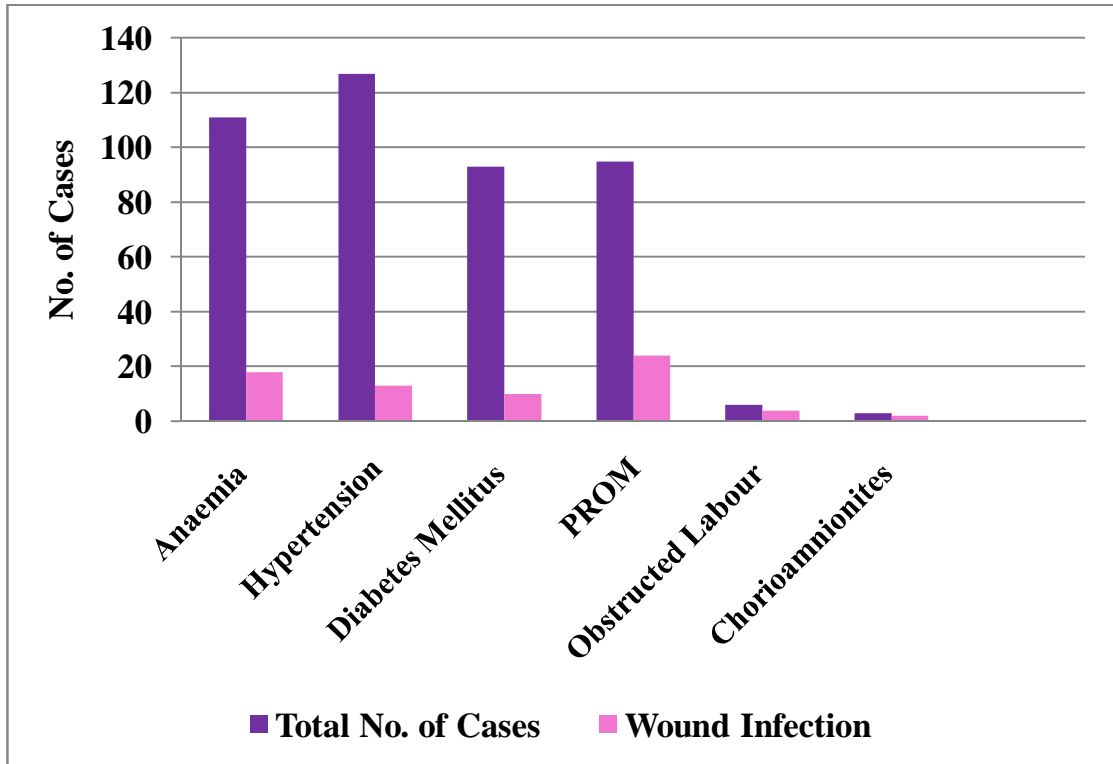


TABLE – 8

WOUND INFECTIONS WITH REFERENCE TO BMI

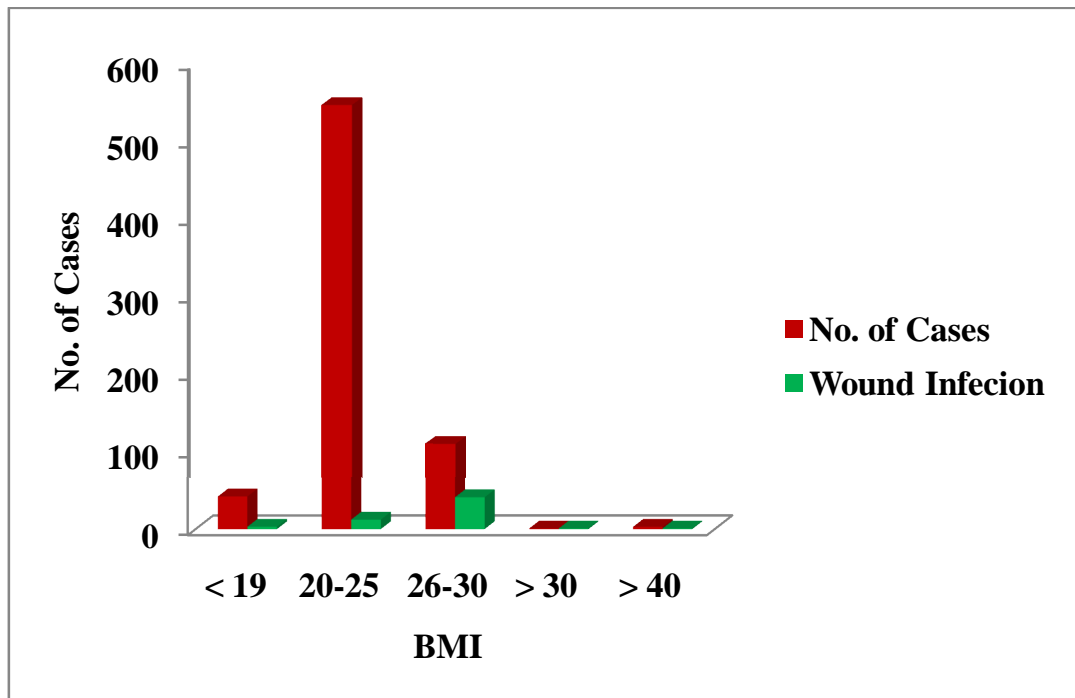
		WOUND INFECTION			
			N0	Yes	Total
BMI GROUP	<19	Count	38	3	41
		% within BMI GROUP	92.7%	7.3%	100.0%
		% within WOUND INFECTION	5.9%	5.3%	5.9%
		% of Total	5.4%	.4%	5.9%
	20-25	Count	534	12	546
		% within BMI GROUP	97.8%	2.2%	100.0%
		% within WOUND INFECTION	83.0%	21.1%	78.0%
		% of Total	76.3%	1.7%	78.0%
	26-30	Count	69	40	109
		% within BMI GROUP	63.3%	36.7%	100.0%
		% within WOUND INFECTION	10.7%	70.2%	15.6%
		% of Total	9.9%	5.7%	15.6%
	>30	Count	0	1	1
		% within BMI GROUP	.0%	100.0%	100.0%
		% within WOUND INFECTION	.0%	1.8%	.1%
		% of Total	.0%	.1%	.1%
	>40	Count	2	1	3
		% within BMI GROUP	66.7%	33.3%	100.0%
		% within WOUND INFECTION	.3%	1.8%	.4%
		% of Total	.3%	.1%	.4%
Total	Count	643	57	700	
	% within BMI GROUP	91.9%	8.1%	100.0%	
	% within WOUND INFECTION	100.0%	100.0%	100.0%	
	% of Total	91.9%	8.1%	100.0%	

It can be seen from the table that the rate of wound infections increased significantly in obese patients (BMI>30).100% of the obese, 33% of the morbidly obese patients had wound infections.

According to Pearson Chi-Square test, Pearson Chi-Square value is 158.481 and p value is 0.000, statistically significant.

FIGURE – 8

WOUND INFECTIONS WITH REFERENCE TO BMI



Obese and morbidly obese are more prone for wound infection.

TABLE – 9**WOUND INFECTIONS WITH REFERENCE TO
TYPE OF SKIN INCISION**

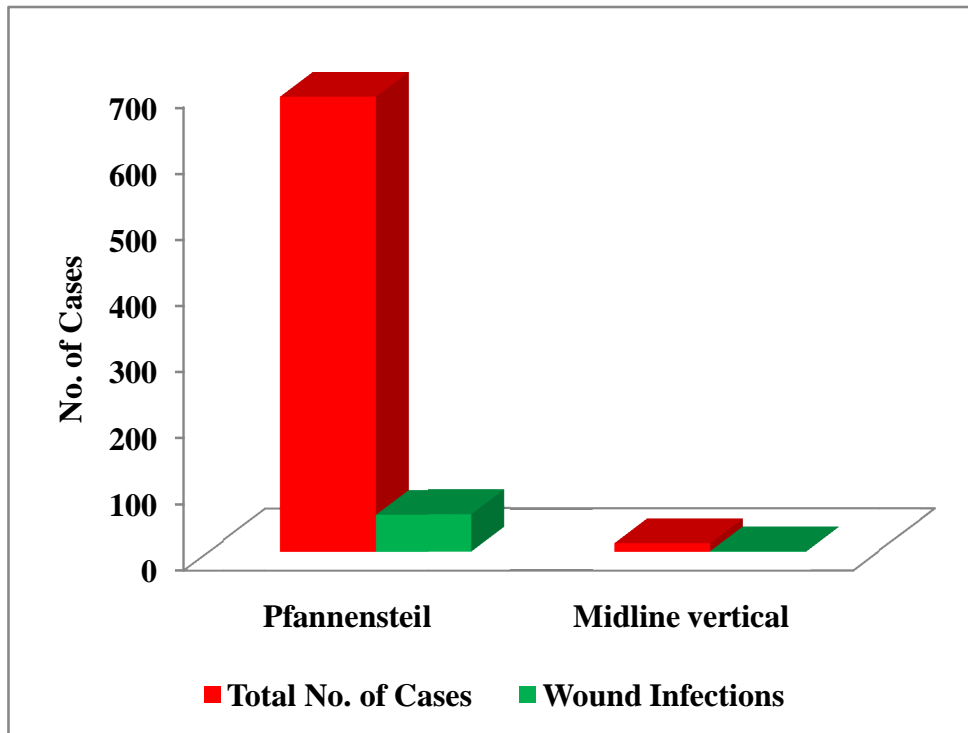
			WOUND INFECTION		Total
			No	Yes	
INCISION	Pfann-einsteil	Count	631	56	687
		% within INCISION	91.8%	8.2%	100.0%
		% within WOUND INFECTION	98.1%	98.2%	98.1%
		% of Total	90.1%	8.0%	98.1%
	Midline vertical	Count	12	1	13
		% within INCISION	92.3%	7.7%	100.0%
		% within WOUND INFECTION	1.9%	1.8%	1.9%
		% of Total	1.7%	.1%	1.9%
Total	Count	643	57	700	
	% within INCISION	91.9%	8.1%	100.0%	
	% within WOUND INFECTION	100.0%	100.0%	100.0%	
	% of Total	91.9%	8.1%	100.0%	

8.2% of the patients developed wound infection with Pfanneinsteil incision compared to 7.7% with mid-line vertical incision.

According to Pearson Chi-Square test, Pearson Chi-Square value is 0.004 and p value is 0.952, statistically insignificant.

FIGURE - 9

**WOUND INFECTIONS WITH REFERENCE
TO TYPE OF INCISION**



Wound infections are common in pfannensteil incision.

TABLE - 10
WOUND INFECTIONS WITH REFERENCE
TO DURATION OF OPERATION

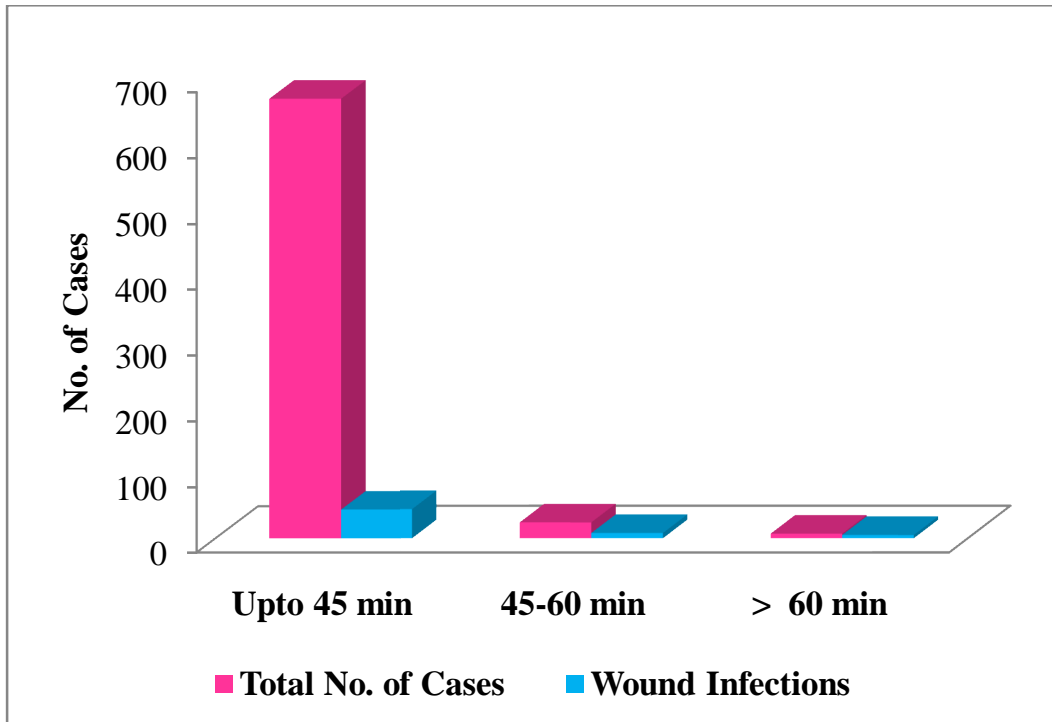
			WOUND INFECTION		Total
			No	Yes	
DURATION GROUP	<45 min	Count	625	44	669
		% within DURATION GROUP	93.4%	6.6%	100.0%
		% within WOUND INFECTION	97.2%	77.2%	95.6%
		% of Total	89.3%	6.3%	95.6%
	45-60 min	Count	16	8	24
		% within DURATION GROUP	66.7%	33.3%	100.0%
		% within WOUND INFECTION	2.5%	14.0%	3.4%
		% of Total	2.3%	1.1%	3.4%
	>60 min	Count	2	5	7
		% within DURATION GROUP	28.6%	71.4%	100.0%
		% within WOUND INFECTION	.3%	8.8%	1.0%
		% of Total	.3%	.7%	1.0%
Total	Count	643	57	700	
	% within DURATION GROUP	91.9%	8.1%	100.0%	
	% within WOUND INFECTION	100.0%	100.0%	100.0%	
	% of Total	91.9%	8.1%	100.0%	

When the duration of operation was more than 60 minutes, 71.4% of women developed wound infection as compared to 33.3% and 6.6% with the duration of operation between 45-60 min and less than 45 minutes respectively.

According to Pearson Chi-Square test, Pearson Chi-Square value is 60.036 and p value is 0.000.

FIGURE – 10

WOUND INFECTION WITH REFERENCE TO DURATION OF OPERATION



As the duration of surgery increases, wound infection rate increases.

TABLE - 11

**WOUND INFECTION WITH REFERENCE
TO TYPE OF SKIN CLOSURE**

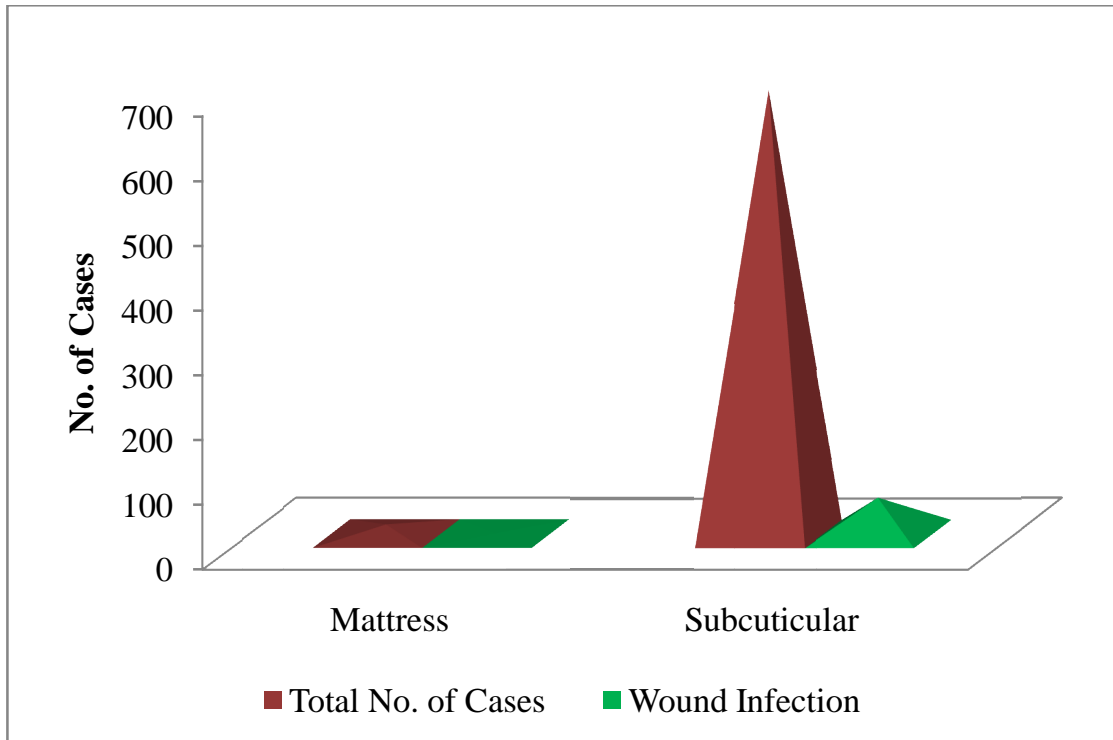
			WOUND INFECTION		Total
			No	Yes	
CLOSURE	Subcuticular	Count	630	56	686
		% within CLOSURE	91.8%	8.2%	100.0%
		% within WOUND INFECTION	98.0%	98.2%	98.0%
		% of Total	90.0%	8.0%	98.0%
	Mattress	Count	13	1	14
		% within CLOSURE	92.9%	7.1%	100.0%
		% within WOUND INFECTION	2.0%	1.8%	2.0%
		% of Total	1.9%	.1%	2.0%
Total	Count	643	57	700	
	% within CLOSURE	91.9%	8.1%	100.0%	
	% within WOUND INFECTION	100.0%	100.0%	100.0%	
	% of Total	91.9%	8.1%	100.0%	

Out of 686 patients with subcuticular suture 56(8.2%) had wound infections where as 1 out 14 (7.1%) with Mattress suture developed wound infections.

According to Pearson Chi-Square test, Pearson Chi-Square value is 0.019 and p value is 0.682, statistically insignificant.

FIGURE – 11

**WOUND INFECTION WITH REFERENCE
TO TYPE OF SKIN CLOSURE**



Wound Infection is more common in subcuticular suture.

TABLE – 12
WOUND INFECTIONS WITH REFERENCE
TO DURATION OF ANTIBIOTICS

			WOUND INFECTION		Total
			No	Yes	
ANTIBIOTICS	0-3 days	Count	31	0	31
		% within ANTIBIOTICS	100.0%	.0%	100.0%
		% within WOUND INFECTION	4.8%	.0%	4.4%
		% of Total	4.4%	.0%	4.4%
	4-7 days	Count	588	31	619
		% within ANTIBIOTICS	95.0%	5.0%	100.0%
		% within WOUND INFECTION	91.4%	54.4%	88.4%
		% of Total	84.0%	4.4%	88.4%
	8-10 days	Count	24	26	50
		% within ANTIBIOTICS	48.0%	52.0%	100.0%
		% within WOUND INFECTION	3.7%	45.6%	7.1%
		% of Total	3.4%	3.7%	7.1%
Total	Count	643	57	700	
	% within ANTIBIOTICS	91.9%	8.1%	100.0%	
	% within WOUND INFECTION	100.0%	100.0%	100.0%	
	% of Total	91.9%	8.1%	100.0%	

52% of the women who received antibiotics for than 7 days developed wound infection, where as in patients who received antibiotics for 4-7 days and 3 days, wound infection were 5% and 0% respectively.

According to Pearson Chi-Square test, Pearson Chi-Square value is 267.786 and p value is 0.000, statistically in significant.

FIGURE - 12

**WOUND INFECTIONS WITH REFERENCE
TO DURATION OF ANTIBIOTICS**

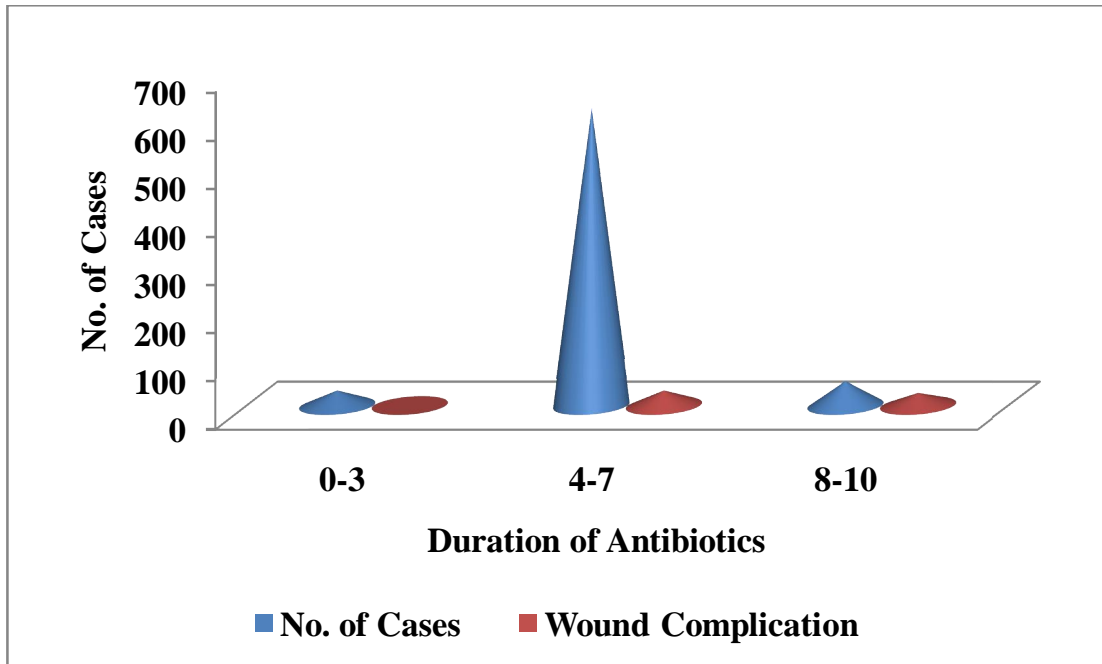


TABLE – 13

**WOUND INFECTIONS WITH REFERENCE
TO DURATION OF HOSPITAL STAY**

			WOUND INFECTION		Total
			No	Yes	
DAYS GROUP	0-3 days	Count	527	13	540
		% within DAYS GROUP	97.6%	2.4%	100.0%
		% within WOUND INFECTION	82.0%	22.8%	77.1%
		% of Total	75.3%	1.9%	77.1%
	4-8 days	Count	102	26	128
		% within DAYS GROUP	79.7%	20.3%	100.0%
		% within WOUND INFECTION	15.9%	45.6%	18.3%
		% of Total	14.6%	3.7%	18.3%
	9-14 days	Count	7	15	22
		% within DAYS GROUP	31.8%	68.2%	100.0%
		% within WOUND INFECTION	1.1%	26.3%	3.1%
		% of Total	1.0%	2.1%	3.1%
	15-21 days	Count	3	3	6
		% within DAYS GROUP	50.0%	50.0%	100.0%
		% within WOUND INFECTION	.5%	5.3%	.9%
		% of Total	.4%	.4%	.9%
	>21 days	Count	4	0	4
		% within DAYS GROUP	100.0%	.0%	100.0%
		% within WOUND INFECTION	.6%	.0%	.6%
		% of Total	.6%	.0%	.6%
Total	Count	643	57	700	
	% within DAYS GROUP	91.9%	8.1%	100.0%	
	% within WOUND INFECTION	100.0%	100.0%	100.0%	
	% of Total	91.9%	8.1%	100.0%	

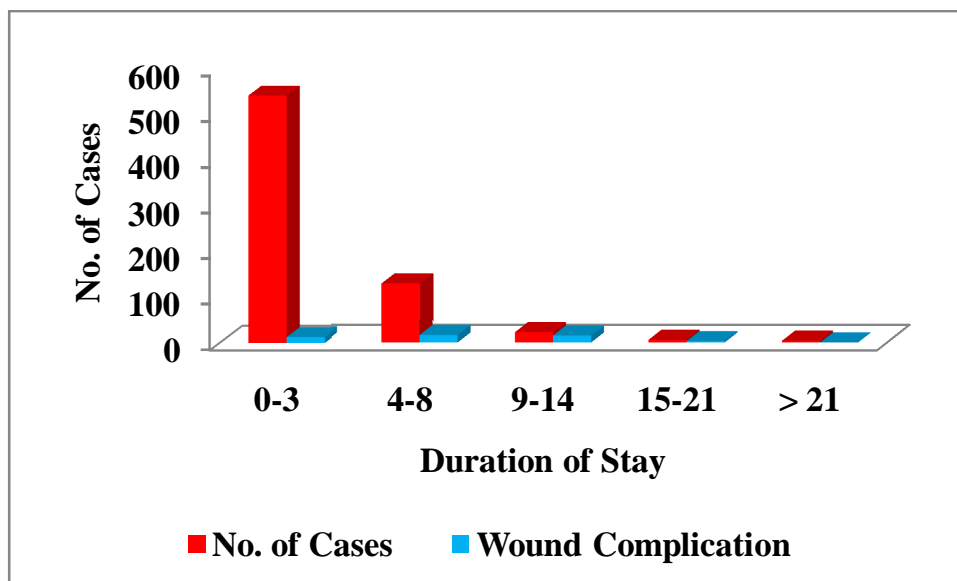
The average hospital stay for women with no complication was 7

days. In those women who had wound infections, 15 patients stayed for > 9 days and 3 patients stayed for > 15 days.

According to Pearson Chi-Square test, Pearson Chi-Square value is $\chi^2 = 169.524$ and p value is 0.000, statistically significant.

Thus wound infection increased the hospital stay by an average of 7 days.

FIGURE – 13
WOUND INFECTIONS WITH REFERENCE
TO DURATION OF HOSPITAL STAY



MOST COMMONLY OBTAINED ORGANISMS

The various pathogen isolated by culture in our study are Staphylococcus Aureus, E.coli, Pseudomonas, Klebsiella, Enterobacter Spp. Few patients had no growth. The commonest organism obtained was Staphylococcus Aureus.

TABLE – 14

COMMONLY OBTAINED ORGANISMS

Organism	No. of cases
Staphylococcus Aureus	18
E.Coli	10
Pseudomonas	6
Klebsiella	9
Enterobacter	4
No growth	10

MANAGEMENT OF WOUND INFECTIONS

Out of 57 wound infections, 25 patients underwent resuturing and 32 patients were treated with daily dressings and antibiotics depending on culture sensitivity report. All these treated patients were discharged at the end of hospital stay without further problems.

TABLE – 15

MANAGEMENT OF WOUND INFECTIONS

Management	No. of cases
Resuturing	25
Daily dressing and antibiotics	32
Total	57

ANTIBIOTIC SENSITIVITY PATTERN

The following tables show the sensitivity pattern of different organisms isolated in our study.

Staphylococcus aureus

ANTIBIOTICS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Amikacin	S	S	S	R	S	R	S	S	S	S	S	R	S	S	S	R	S	S
Gentamycin	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ofloxacin	S	S	R	S	S	S	R	S	S	S	S	S	S	S	S	S	S	S
Cephalexin	S	S	S	S	R	S	R	S	S	S	S	R	S	S	S	S	S	R
Cefotaxime	S	R	S	S	R	S	R	S	S	S	S	R	S	S	S	R	S	R
Erythromycin	R	R	S	R	R	R	S	S	R	R	R	R	S	S	R	R	S	S
Amoxycillin	R	R	S	R	R	R	R	R	R	R	R	R	R	S	R	S	S	S
Ciprofloxacin	R	R	R	R	R	R	S	R	R	R	R	S	S	R	R	S	S	R
Doxycycline	S	S	R	S	R	S	R	S	S	S	S	S	S	S	R	S	S	R

Staph Aureus is most sensitive to Gentamycin(100%).

E.Coli

ANTIBIOTICS	1	2	3	4	5	6	7	8	9	10
Amikacin	S	S	S	S	S	S	S	S	S	S

Gentamycin	S	S	R	R	S	S	R	S	R	R
Ofloxacin	S	S	S	S	R	S	S	S	S	S
Cefotaxime	S	R	S	S	R	R	R	R	S	R
Cephalexin	S	R	R	R	R	R	R	S	S	R
Ciprofloxacin	S	R	S	S	R	R	R	S	R	S

E.Coli is most sensitive to Amikacin (100%).

Klebsiella

ANTIBIOTICS	1	2	3	4	5	6
Amikacin	S	S	S	S	S	S
Gentamycin	S	S	S	S	S	S
Ofloxacin	S	S	S	R	S	S
Cefotaxime	R	S	S	S	S	R
Cephalexin	S	S	S	R	S	S
Doxycycline	R	S	R	S	R	S

Klebsiella is most sensitive to Amikacin (100%) and Gentamycin

(100%).

Pseudomonas

Antibiotics	1	2	3	4	5	6
Amikacin	S	S	R	R	R	S
Gentamycin	R	S	R	S	S	S
Ofloxacin	S	R	S	S	S	R
Ceftazidime	S	S	S	S	S	S
Cefipime	S	S	S	S	S	S
Ciprofloxacin	S	S	S	S	S	R

Pseudomonas is most sensitive to Ceftazidime (100%), Cefipime (100%), and Ciprofloxacin (80%).

Enterobacter Spp.

ANTIBIOTICS	1	2	3	4
Amikacin	S	R	S	S
Gentamycin	S	R	S	R
Ofloxacin	S	S	R	S
Cefotaxime	S	S	S	S
Cephalexin	R	S	S	S
Ciprofloxacin	R	R	S	R

Enterobacter Spp. is most sensitive to Cefotaxime (100%).

Based on the sensitivity pattern of different isolates of bacteria, an empiric antibiotic therapy in post caesarean wound infection can be implemented.

DISCUSSION

The current study was done with 700 patients with both elective and emergency LSCS during January 2013-November 2013 at Kilpauk Medical College, Chennai.

The wound infection rates after caesarean section vary from 2.8-26.8% reported in literature, the incidence of wound infection in present study was 8.14%. The study conducted by A.R. Mahale et al, (2008) showed an incidence of 8.6%.⁶⁸ In a Study conducted by Thach son Tran et al, (2000) the overall rate of post operative infection was 12.4% which was reported in prospective study of 1319 caesareans which was comparable to our study.

The Study conducted by Alison M. Pyper (2001), reported that in low risk patients the wound infection rate was 1.1% and in high risk patients it ranged from 6.3% to 9.6%. In a study by AR McHale (2008), elective and emergency caesarean section did not show difference in overall wound infection rate, but in their study wound gapes were relatively more in emergency LSCS, whereas in the present study incidence of wound infections in elective LSCS was 4.8% which is less compared to emergency LSCS (8.6%).

The incidence of wound infections in various risk factors like Anemia (16.2%), Hypertensive (10.2%), DM (10.8%), Obstructed labour (66%), Chorioamnionitis (66%), PROM (25%) were comparable with the similar results obtained by AR Mahale study (2008)⁶⁸ which showed chorioamnionitis (60%), obstructed labour (76%), PROM (20.8%) and anemia (22%). In the present study Obstructed labor (66%), Chorioamnionitis (66%), significantly increased the wound complication rate in comparison with other variables which were similar to the results given by AR Mahale et al, (2008).⁶⁸

In Study conducted by Tamara C. Takoudes et al, (2004)¹⁷ supports the clinical observation that DM is a risk factor for wound complications. Wound healing is compromised due to poor blood supply, neuropathy and altered immune function.¹⁷ They reported that DM is associated with 2.5 fold increase (18 %) in wound infections after caesarean section. The present study showed 10.8% of wound infection rate in patient with diabetes.

In a Study by Thach Son TRAN et al, (2000)²⁹ reported that obesity is a risk factor for wound infections. The risk of infection doubled for every five unit increment of BMI because of poor vasculature of adipose tissue and dead space formation.²⁹

In the current study it can be seen that the rate of wound infection

was high in obese patients. The rate of wound infections was 33% in morbidly obese patients (BMI>40) and single patient in our study who was obese (BMI>30) developed wound infection.

The present study showed 8.2% of wound infection with pfannenstiel incision, 7.7% with midline vertical incision, where as in a study reported by AR Mahale⁶⁸ showed wound infection rate was statistically more in midline 7(17.17%) than in other type of incisions like pfannenstiel (14.28%), Para median (5.10%) and Joel Cohen (Misghav ladach) (7.48%).

In the study by AR Mahale, (2008) the average hospital stay for woman with no wound complication was 6 days, woman who had wound complication stayed for 14.01 days. The average hospital stay increased by 7 days in wound complicated cases. In the present study the average duration of hospital stay for women with no wound complications was 7 days and women with wound complications stayed for more than 15 days which increased by 8 days.

Thach son TRAN et al (2000)²⁹ also reported that caesareans that lasted longer than 1 hr had 2.4 times the risk of postoperative infection. In the present study 72% of patients had wound infections, when the duration of operation was > 1hr compared to 33% and 6.6% whose duration of operation was between 45 – 60 min and less than 45 min respectively.

Thach son TRAN et al, (2000) also showed that longer the duration of operation increases the risk of postoperative wound infections²⁹. The most common bacteria isolated in current study was staphylococcus aureus, the other isolates obtained were Pseudomonas Spp, Esch coli, Klebsiella, Enterobacter Spp, few patients did not have any bacterial isolates. Many others observed similar findings. In a study by Martens et al, (2005) the most common pathogens cultured from infected caesarean wounds are staphylococcus aureus, Esherichia coli and Proteus mirabilis. In another study by Roberts et al (1993)⁵⁴ identified the most prominent pathogens as cervico vaginal flora such as ureaplasma species and mycoplasma species¹¹. On the other hand others have noted milder infections caused by gram-negative organism such as E. coli and Proteus Spp. However, this is not true for suppurated wounds, particularly those caused by staphylococcus aureus and pseudomonas aeruginosa where a violent local inflammation and tissue destruction occur. The most common type of wound infection found in our study was superficial wound infection.

SUMMARY

The study was conducted with a cohort of 700 patients undergoing lower

segment caesarean section, conducted during January 2013-November 2013 at Kilpauk medical college, Chennai.

- The incidence of post-caesarean wound infections was 8.14% higher than the average of about 6%.
- The commonest type of wound infection was superficial wound infection (56.14%).
- The risk of wound infection was more in emergency LSCS (8.6%) compared to elective LSCS (4.8%).
- The various risk factors which accounted for wound infections are anaemia (16.2%), hypertension (10.2%), DM (10.8%), obstructed labour (66%), chorioamnionitis (66%) and PROM (25%). Chorioamnionitis and obstructed labour significantly showed increased risk for wound infections.
- The risk of wound infection was higher with increase in BMI. 100% with BMI of more than 30 and 33.3% in BMI of more than 40.
- Pfannenstiel incision (8.2%) showed higher incidence of wound infections compared to mid-line (7.7%).
- Wound infection rate was more in patients who had subcuticular type of skin closure (7.14%) compared to mattress stitch.
- Wound infection rate was high in low socioeconomic status class

v (15.2%) than class III (3.3%)

- Increased duration of operation increased the risk of wound infections (71.4% in patients with more than 60 min of procedure).
- Wound infections increased the duration of the hospital stay by 7days.
- The most common organism obtained was Staphylococcus aureus.

CONCLUSION

Caesarean section has become one of the commonest surgical procedures in obstetric practice. The incidence of wound infections after caesarean section in this study was 8.14%.

Study confirms that risk factors like anemia, chorioamnionitis; PROM, obstructed labour, preeclampsia, increased surgical time, increase BMI poses risk for wound infections. Whereas chorioamnionitis (66%) and obstructed labour (66%) showed increased risk for wound infections.

Wound infections increased the duration of the hospital stay, which again increased the extra financial burden both to the patients and the Hospital.

The commonest organism isolated was staphylococcus aureus. Superficial wound infection was the commonest wound infection which was treated by daily dressing and antibiotics.

Correcting malnutrition, anemia, stabilizing diabetes and eradicating all infection such as urinary tract infection, proper preparation of skin, proper surgeons scrubbing, and using proper surgical technique can decrease the risk of post operative abdominal wound infection.

Knowledge of these risk factors would help the obstetrician in avoiding this complication and help to decrease the maternal morbidity post operatively.

Based on the sensitivity pattern of different isolates of bacteria, an empiric antibiotic therapy in post caesarean infection can be implemented.

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PROFOMA

Name

Phone No

IP NO

▶ Age -

Height

▶ Socioeconomic status-

Weight

▶ Address-

BMI

▶ Education -

Parity

▶ Occupation-

▶ Booked/Unbooked-

▶ Referred/Non referred-

▶ Low risk

▶ High risk- Anemia/GDM/Antepartum fever/ PROM/PPROM
/HT/Pre-eclampsia/Eclampsia/ Renal disease/Immunosuppressant

▶ Elective/Emergency

▶ Indication

▶ Emergency

Induced/spontaneous/No labour

PROM/PPROM time

Membranes ruptured –ARM/Spontaneous

Time interval from rupture of membranes to delivery

- ▶ Hand wash prior to PV
- ▶ Number of Vaginal examination
 - ▶ Antibiotics prophylactic
 - Therapeutic
 - Drug and dosage
 - ▶ Type of anaesthesia
 - ▶ Type of skin incision
 - Pfanneinsteil/Midline vertical
 - ▶ Complications during surgery
 - ▶ Duration of surgery
- ▶ Number of persons assisting surgery- PG/CRRRI
 - ▶ Suture materials used for closure
 - Uterus
 - Peritoneum
 - Rectus muscle
 - Rectus sheath
 - Subcutaneous
 - Skin-Subcuticular/Interrupted
 - ▶ Postoperative complaints
 - ▶ Indurations open/closed

- ▶ Wound gaping
- ▶ Serous/Serosanguinous/purulent discharge
 - ▶ Resuturing
 - ▶ Duration of stay
- ▶ Pus culture sensitivity sent on day and report
 - ▶ High Vaginal swa
- ▶ Pus c/s sent on day and report

- ▶ Investigations

Blood sugar

Preop Hb

Postop Hb

HBsAg

HIV

Other Fever investigations

- ▶ Signature of the investigator
- ▶ Signature of the guide

MASTER CHART

Sl. No.	IP No.	Name	Age	Age Group	Parity	mi-1	Multi-2	LSCs	Day of Stay	SE Status	BMI	Anaemia	HT	DM	Prom	Chorioamnionitis	Obstruited labour	intraoperative				Antibiotics	Post Op Complication	Organism	Treatment	Other
																		Anaesthesia	Duration	Incision	Closure					
1	1310946	Bhargavi	19	1	1	1	1	8	4	23	0	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
2	1316164	Alamelu	28	2	1	1	1	8	4	22	0	0	0	0	0	0	0	SA	40	P	SC	5	0	0	0	0
3	1315361	Devi	30	2	1	1	1	8	4	23	0	0	0	0	0	0	0	SA	45	P	SC	5	0	0	0	0
4	1316574	Alima	23	2	1	1	1	7	4	26	0	0	1	0	0	0	0	SA	30	P	SC	5	0	0	0	0
5	1316170	Sujatha	29	2	2	1	1	8	4	22	1	0	0	0	0	0	0	SA	40	P	SC	7	0	0	0	0
6	1316611	Jeevitha	23	2	2	1	1	8	5	24	0	0	0	0	0	0	0	SA	45	P	SC	5	0	0	0	Asthma
7	1316343	Bhaviya	20	1	2	1	1	7	4	24	0	0	0	0	0	0	0	SA	50	P	SC	5	0	0	0	0
8	1315068	Deepa	25	2	1	1	1	8	4	30	0	0	1	0	0	0	0	SA	40	P	SC	7	0	0	0	0
9	1315064	Vasanthi	22	2	2	1	1	7	5	25	1	0	0	0	0	0	0	SA	35	P	SC	7	0	0	0	0
10	1314914	Sandiya	23	2	1	1	1	8	3	26	0	0	0	0	0	0	0	SA	40	P	SC	7	0	0	0	0
11	1315872	Lakshmi	38	3	2	1	1	8	4	22	0	1	0	10	0	0	0	SA	45	P	SC	5	0	0	0	0
12	1315888	jayashree	20	1	2	1	1	8	4	28	0	1	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
13	1***316400	Sheeba	25	2	2	1	1	8	4	24	0	1	1	0	0	0	0	SA	40	P	SC	5	0	0	0	0
14	1316609	Selvi	24	2	2	1	1	7	4	25	0	0	1	0	0	0	0	SA	30	P	SC	5	0	0	0	0

15	1316518	Veeralakshmi	23	2	2	1	8	3	18	0	1	0	0	0	0	SA	40	P	SC	7	0	0	0	0
16	1316519	Valli	23	2	1	1	8	4	20	0	0	0	6	0	0	SA	60	P	SC	5	0	0	0	0
17	1316520	murugeswari	32	3	2	1	7	4	20	1	0	0	0	0	0	SA	40	P	SC	5	0	0	0	0
18	1316103	madhavi	25	2	2	1	8	4	23	1	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
19	1316097	Tamilselvi	28	2	2	2	7	4	22	0	1	+	0	0	0	SA	45	P	SC	5	0	0	0	0
20	1313531	Devi Rameshkumar	20	1	2	1	7	3	22	0	1	0	0	0	0	SA	35	P	SC	5	0	0	0	0
21	1315490	panchavarnam	20	1	2	2	25	4	24	1	0	0	0	0	0	SA	35	P	SC	7	0	0	0	0
22	1314742	Gangadevi	23	2	2	1	9	4	18	0	0	0	0	0	0	SA	30	P	SC	6	0	0	0	0
23	1315508	Kavitha	22	2	2	2	14	4	24	0	0	1	0	0	0	SA	35	P	SC	7	0	0	0	HYPO
24	1314504	Mythili	28	2	1	1	9	4	22	0	1	0	8	0	0	SA	30	P	SC	7	0	0	0	0
25	1315557	Indra Ezhilarasan	23	2	2	1	8	4	22	0	0	0	0	0	0	SA	35	P	SC	7	0	0	0	0
26	1315633	Sudha	24	2	2	1	8	3	28	0	0	0	0	0	0	SA	40	P	SC	7	0	0	0	0
27	1314897	Indra prakash	20	1	2	2	8	4	28	0	1	0	0	0	0	SA	35	P	SC	7	0	0	0	0
28	1310469	Deepa Anand	26	2	2	1	7	4	20	0	0	0	0	0	0	SA	40	P	SC	7	0	0	0	0
29	1318764	petchiyammal	22	2	2	1	7	3	18	0	0	0	0	0	0	SA	45	P	SC	7	0	0	0	0
30	1318796	Anandhi	30	2	2	2	9	4	21	0	0	0	0	0	0	SA	35	P	SC	7	0	0	0	0
31	1318752	Lakshmi saravanan	30	2	2	1	20	5	44	0	0	0	0	0	0	SA	30	P	SC	7	SWB	STAPH	RE	0
32	1316310	Vasanthi Lakshmanan	20	1	2	2	30	5	22	0	0	0	0	0	0	SA	35	P	SC	7	SWB	PE	RE	0
33	1314753	Latha	24	2	2	1	18	5	44	0	0	0	0	0	0	SA	90	P	SC	10	SWB	E.COLI	RE	0
34	1316530	Thilagavathy	20	1	1	1	20	5	22	0	1	0	0	0	0	SA	40	P	SC	7	SWB	STAPH	RE	0
35	1316525	Rani suresh	26	2	1	1	26	5	24	0	0	0	18	0	0	SA	45	P	SC	7	SWB	STAPH	RE	0
36	1316493	Sivasankari	30	2	1	1	25	5	23	0	0	0	0	0	0	SA	60	P	SC	7	SWB	E.COLI	RE	0

37	1317862	Savitha	28	2	2	1	8	4	24	0	1	0	0	0	0	SA	55	P	SC	7	0	0	0	0
38	1316373	Jenifer	22	2	2	1	7	4	26	0	0	0	0	0	0	SA	30	P	SC	7	0	0	0	0
39	1316323	Kala	33	3	2	1	7	5	28	0	0	0	0	0	0	SA	35	P	SC	7	0	0	0	0
40	1316334	Kanniga	25	2	2	1	8	4	28	0	0	0	4	0	0	SA	35	P	SC	7	0	0	0	PPH
41	1316355	priyanka	26	2	1	1	8	4	26	0	0	0	8	0	0	SA	40	P	SC	7	0	0	0	0
42	1316482	Divya	24	2	2	2	8	5	20	0	1	0	0	0	0	SA	35	P	SC	7	0	0	0	0
43	1310940	Jayanthi Elumalai	26	2	2	1	8	4	28	0	0	0	4	0	0	SA	40	P	SC	7	0	0	0	0
45	1308313	Umarani	27	2	2	1	8	4	18	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
46	1310442	Renukadevi	28	2	1	1	7	5	20	0	0	0	0	0	0	SA	30	P	SC	5	0	0	0	0
47	1309267	Sumithra	23	2	1	1	8	5	22	1	0	1	18	0	0	SA	90	P	SC	5	SWI	PE	DD/A	0
48	1310453	Sasikala	22	2	2	1	8	5	24	0	0	0	0	0	0	SA	40	P	SC	5	SWI	NG	DD/A	0
49	1309758	Kalyani	24	2	2	1	7	5	26	0	0	1	4	0	0	SA	35	P	SC	7	SWB	STAPH	RE	0
50	1308115	Jayasudha	19	1	2	2	7	4	24	0	0	0	0	0	0	SA	35	P	SC	7	0	0	0	0
51	1308317	Vasuki	30	2	1	1	15	5	24	1	0	0	0	0	0	SA	45	P	SC	7	SWI	E.COLI	DD/A	0
52	1308319	Sangeetha	22	2	2	1	8	4	23	0	0	0	0	0	0	SA	30	P	SC	5	0	0	0	0
53	1308168	Jayashree Karthick	24	2	2	1	8	4	24	0	0	0	0	0	0	SA	30	P	SC	5	0	0	0	0
54	1314195	Selvi Settu	25	2	1	1	8	4	23	0	0	0	0	0	0	GA	30	P	SC	5	0	0	0	0
55	1314020	Madhana	32	3	2	1	10	5	20	0	0	0	4	0	0	SA	45	P	SC	7	SWI	STAPH	DD/A	0
56	1315367	Vennila	26	2	2	1	8	4	19	0	0	1	0	0	0	SA	35	MV	SC	7	0	0	0	0
57	1314942	Jessipriya	19	2	2	2	7	4	24	0	0	0	0	0	0	SA	35	P	SC	7	0	0	0	0
58	1315364	Prabhavathy	24	2	1	1	8	4	26	0	0	0	0	0	0	SA	40	P	SC	4	0	0	0	0
59	1314989	Usha Saravanan	23	2	1	1	20	5	22	1	0	0	10	0	1	SA	70	P	SC	7	SWI	E.COLI	DD/A	0

60	1314543	Pappu Michalraj	23	2	2	1	8	4	27	0	1	0	0	0	0	SA	30	P	M	5	0	0	0	0
61	1359395	Vijayalakshmi	26	2	1	1	8	4	23	0	0	0	0	0	0	SA	30	P	SC	5	0	0	0	0
62	1314546	Baby Sankar	27	2	2	1	8	4	23	0	0	0	0	0	0	SA	40	P	SC	5	0	0	0	0
63	1314544	Shenbagam	24	2	2	1	8	4	22	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
64	1314426	Subetha	19	1	1	1	20	5	23	1	1	0	24	0	0	SA	30	P	SC	7	SWB	STAPH	RE	0
65	1314320	Saraswathy Suresh	23	2	1	1	9	3	20	0	1	1	2	0	0	SA	30	P	SC	7	0	0	0	0
66	1306112	Sumathi Elumalai	28	2	2	2	9	5	19	0	0	0	0	0	0	SA	35	P	SC	8	0	0	0	0
67	1313889	Tamilselvi Palanivel	29	2	2	1	7	4	22	0	0	0	0	0	0	SA	30	P	M	4	0	0	0	0
68	1313665	Chitra Kuppan	23	2	2	1	16	5	19	0	0	0	6	0	0	SA	30	P	SC	7	SWB	E.COLI	RE	UTI
69	1314661	Gomathy suresh	24	2	1	1	8	4	20	0	1	0	0	0	0	SA	40	P	SC	5	0	0	0	0
70	1314656	Sathya	23	2	1	1	8	4	21	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
71	1312727	Mariyammal	22	2	1	1	9	4	22	0	0	0	4	0	0	SA	35	P	SC	5	0	0	0	0
72	1306114	Bhuvaneshwari	21	2	2	2	15	5	32	0	0	0	0	0	0	SA	40	P	SC	7	SWB	STAPH	RE	0
73	1313625	Kalaivani Dharman	23	2	2	1	8	4	22	1	0	0	0	0	0	SA	30	P	SC	5	0	0	0	0
74	1314321	Sangeetha Nagaraj	24	2	2	1	8	4	18	0	0	1	0	0	0	SA	35	P	SC	5	0	0	0	0
75	1314279	Maheshwari Balaji	24	2	1	1	7	5	19	0	0	0	4	0	0	SA	30	P	SC	5	0	0	0	0
76	1314227	Thilaga Gokilan	28	2	2	1	15	5	30	0	1	1	0	0	0	SA	50	P	SC	7	SWB	KLEBSIELLA	RE	0
77	1314191	Vinotha Rajkumar	23	2	1	1	7	4	24	1	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
78	1314535	Raagail Rai	25	2	2	1	9	3	23	0	1	0	3	0	0	SA	30	MV	SC	5	0	0	0	0
79	1314526	Madhavi Arun	26	2	2	1	8	4	26	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
80	1309815	Kuttiyamma	23	2	2	1	9	5	24	0	-	0	4	0	0	SA	35	P	SC	6	0	0	0	0
81	1310465	Anuradha	22	2	1	1	15	5	22	0	1	1	24	0	0	SA	40	P	SC	5	SWB	PE	RE	0

82	1311248	Seetha Suresh	26	2	1	2	7	4	23	0	1	0	0	0	0	SA	35	P	SC	7	0	0	0	0
83	1306129	Rani Nagaraj	27	2	2	1	8	5	24	1	0	0	0	0	0	SA	35	P	M	5	0	0	0	0
84	1310943	Fathima	24	2	1	1	9	5	25	0	1	0	0	0	0	SA	30	P	SC	5	0	0	0	0
85	1310899	Sivasankari Baskaran	25	2	2	1	8	5	18	0	0	0	0	0	0	GA	35	P	SC	7	0	0	0	0
86	1314351	Saritha Bhookanthan	27	2	2	1	9	5	19	0	0	0	0	0	0	SA	30	P	SC	6	0	0	0	PUO
87	1311184	Uma Mukundhan	29	2	1	1	8	3	22	0	1	1	0	0	0	SA	40	P	SC	5	0	0	0	0
88	1310464	Zairabanu	23	2	2	1	8	5	23	0	0	0	0	0	0	SA	30	P	SC	5	0	0	0	0
89	1311287	Kasthuri Sridar	22	2	2	1	9	4	24	0	1	0	0	0	0	SA	35	P	SC	7	0	0	0	0
90	1311291	Porkodi Kumaresan	21	2	2	1	9	5	19	0	0	0	0	0	0	SA	30	P	SC	5	0	0	0	0
91	1309759	Saraswathy sakhthivel	19	1	1	1	8	4	23	1	0	0	6	0	0	SA	35	P	SC	5	0	0	0	0
92	1311792	Kokila Raja	19	1	2	1	8	5	22	0	1	0	0	0	0	SA	40	P	SC	5	0	0	0	0
93	1304772	Sonia Jayapal	20	1	2	1	8	4	24	0	1	0	0	0	0	SA	35	P	SC	5	0	0	0	0
94	1306123	Kamatchi Kamraj	25	2	1	1	15	5	29	0	0	0	24	0	0	SA	60	P	M	10	SWB	STAPH	RE	0
95	1311281	Indirani Ramesh	30	2	1	1	9	5	24	1	1	0	0	0	0	SA	30	P	SC	5	0	0	0	0
96	1310311	Subbulakshmi	25	2	2	1	8	4	23	0	0	1	0	0	0	SA	35	P	SC	5	0	0	0	0
97	1306056	Parameshwari Velliah	26	2	1	1	9	3	22	0	1	0	5	0	0	SA	35	P	SC	5	0	0	0	0
98	1309865	Yuvarani Muralimohan	27	2	2	2	8	5	21	0	-	1	0	0	0	SA	20	P	SC	5	0	0	0	0
99	1307604	Jayanthi Rakesh	31	3	1	1	9	4	19	1	1	0	0	0	0	SA	35	P	SC	5	0	0	0	0
100	1314620	Reena Govindharaj	24	2	1	1	15	5	23	0	0	0	18	1	1	SA	90	P	SC	7	SWB	PE	RE	0
101	1308740	Chandra Kuppan	25	2	2	1	8	5	23	1	1	0	6	0	0	SA	40	P	SC	5	0	0	0	0
102	1313867	Thirupurasundari	26	2	2	1	8	4	22	0	0	1	0	0	0	SA	45	P	SC	5	0	0	0	0
103	1314122	Radha Dillibabu	27	2	1	1	8	5	19	0	1	0	0	0	0	SA	35	P	SC	6	0	0	0	0

104	1313559	Beebee John	25	2	2	1	12	3	23	1	0	0	18	0	0	SA	60	P	SC	7	SWI	E.COLI	DD/A	0
105	1311332	Nathiya Mathivanan	22	2	1	1	9	4	18	1	0	1	0	0	0	SA	40	P	SC	8	0	0	0	0
106	1308242	Deepa Rajesh	25	2	2	2	9	5	22	0	1	0	3	0	0	SA	35	P	SC	5	0	0	0	0
107	1313742	Bhavani Rajesh	24	2	2	1	8	4	24	0	0	0	2	0	0	SA	30	P	SC	8	0	0	0	0
108	1315350	Vijayalakshmi Ragul	30	2	1	1	8	4	25	0	0	1	0	0	0	SA	35	P	SC	5	0	0	0	0
109	1321999	Gomathy suresh	24	2	1	1	8	5	23	0	0	0	0	0	0	SA	30	P	SC	6	0	0	0	0
110	1322387	Jayalakshmi	26	2	2	1	8	3	24	0	0	0	0	s	0	SA	30	P	SC	5	0	0	0	0
111	1322386	Sivagami	24	2	1	1	9	4	24	0	0	0	0	0	0	SA	35	P	SC	8	0	0	0	0
112	1322430	Lakshmi Ravi	23	2	1	1	8	5	25	0	0	0	0	0	0	SA	30	P	SC	8	0	0	0	0
113	1322511	Kalyani Vetri	22	2	1	1	14	5	23	1	1	0	20	0	0	SA	60	P	SC	7	SWI	STAPH	DD/A	0
114	1322219	Selvi Thirupathi	25	2	1	1	7	4	22	0	1	0	4	0	0	SA	35	P	SC	7	0	0		0
115	1322219	Uma Arulselvan	26	2	2	1	8	3	27	0	0	1	0	0	0	SA	40	P	SC	5	0	0	0	0
116	1322559	Selvi padmanathan	19	1	2	1	8	4	19	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
117	1322831	Nithya Paramswaran	18	1	2	1	9	5	18	0	0	0	0	0	0	SA	30	P	SC	5	0	0	0	0
118	1322923	Vijayashanthi	20	1	2	2	8	4	23	0	0	1	0	0	0	SA	30	P	SC	5	0	0	0	0
119	1322968	Ambiga Ramakrishnan	21	2	2	1	8	4	22	0	0	0	3	0	0	SA	35	P	SC	5	0	0	0	0
120	1322956	Praveena	27	2	2	1	9	4	22	0	1	0	6	0	0	SA	30	P	SC	5	0	0	0	0
121	1323134	Devi Dayalan	26	2	1	1	8	5	24	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
122	1323136	Minigeorge	19	1	1	1	8	4	26	1	1	0	0	0	0	SA	30	P	SC	5	0	0	0	0
123	1323389	Subashini Karthik	23	2	2	1	9	4	27	1	0	0	0	0	0	SA	40	P	SC	5	0	0	0	0
124	1323409	Annalakshmi	25	2	1	1	8	3	23	0	1	0	0	0	0	SA	35	P	SC	8	0	0	0	0
125	1323605	Kalaivani Logesh	24	2	1	1	8	5	24	0	0	1	0	0	0	SA	30	P	SC	6	0	0	0	0

126	1323665	Nandhini	22	2	1	1	12	5	30	0	1	0	0	0	0	SA	40	P	SC	7	SWB	STAPH	RE	0
127	1323731	Kalpana Saravanan	25	2	2	1	8	4	27	0	0	0	0	0	0	SA	30	P	SC	6	0	0	0	0
128	1323933	Kalpana Ramkumar	20	1	2	1	8	5	22	1	1	0	0	0	0	SA	35	P	SC	5	0	0	0	0
129	1323821	Meenakshi	24	2	2	1	8	4	24	0	0	0	0	0	0	SA	30	P	SC	5	0	0	0	0
130	1323623	Maheshwari Kaveri	29	2	2	1	8	5	25	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
131	1324547	Seetha Karuppan	30	2	2	1	10	5	20	1	0	0	10	0	0	SA	40	P	SC	10	SWI	KLEBSIELLA	DD/A	0
132	1324581	Lakshmi Anbalagan	31	3	2	1	8	3	22	0	1	0	0	0	0	SA	30	P	SC	5	0	0	0	0
133	1324573	Vanitha	28	2	1	1	8	5	22	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
134	1324628	Pramila Mohan	22	2	2	1	8	4	25	0	0	0	0	0	0	SA	40	P	SC	5	0	0	0	0
135	1324633	Suganya senthil	21	2	2	1	9	4	26	0	0	0	0	0	0	SA	40	P	SC	5	0	0	0	0
136	1324643	Meenakshi Paneerselvam	20	1	2	1	8	4	22	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
137	1324487	Ebsiclara	19	1	2	1	7	5	24	0	0	0	0	0	0	SA	30	P	SC	5	0	0	0	0
138	1324662	Manokari	23	2	1	2	9	3	25	0	1	0	0	0	0	SA	35	P	SC	5	0	0	0	0
139	1324663	Manonmani	24	2	2	1	8	4	24	0	0	0	4	0	0	SA	40	P	SC	5	0	0	0	0
140	1324889	Anandhi	24	2	2	1	7	4	18	0	0	0	6	0	0	SA	35	P	SC	5	0	0	0	0
141	1324837	Nirmala jaisankar	26	2	2	2	8	5	26	0	0	0	0	0	0	SA	30	P	SC	5	0	0	0	0
142	1324824	Latha	24	2	2	1	9	4	23	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
143	1325160	Nishanthi	28	2	1	1	8	4	26	0	1	0	0	0	0	SA	35	P	SC	6	0	0	0	0
144	1325272	Selvi Muthu	30	2	2	1	7	4	25	0	1	0	0	0	0	SA	40	P	SC	5	0	0	0	0
145	1325274	Revathi Govindharajan	31	3	2	1	9	5	24	0	1	1	0	0	0	SA	35	P	SC	6	0	0	0	0
146	1325569	Bhavani Mukesh	27	2	2	1	8	4	24	1	1	0	0	0	0	SA	30	P	SC	5	0	0	0	0
147	1325573	Priyadarshini	26	2	1	1	7	5	26	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0

148	1325695	Mohanapriya	32	3	2	1	8	5	23	0	0	0	5	0	0	SA	40	P	SC	5	0	0	0	0
149	1325698	Gayathri Raghav	23	2	1	1	8	4	22	1	0	1	0	0	0	SA	30	P	SC	6	0	0	0	0
150	1359417	Sangeethasubramani	18	1	2	1	8	4	26	0	0	0	2	0	0	SA	35	P	SC	5	0	0	0	0
151	1326051	Dhivya parasu	22	2	2	1	7	4	24	1	0	1	0	0	0	SA	30	P	SC	5	0	0	0	0
152	1326219	Mala	18	1	2	1	6	5	22	1	1	0	0	0	0	SA	35	P	SC	4	0	0	0	0
153	1325939	Gomathy Pachiyapan	23	2	2	1	7	4	24	1	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
154	1326045	Sangeetha	24	2	2	1	6	5	24	0	0	0	0	0	0	SA	40	P	SC	5	0	0	0	0
155	1359391	Muthulakshmi	23	2	2	1	6	4	28	1	0	0	0	0	0	SA	30	P	SC	4	0	0	0	0
156	1330737	Radhika Ganeshkumar	22	2	2	2	6	5	29	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
157	1331081	Elizabeth	19	1	2	2	7	5	19	0	0	0	0	0	0	SA	30	P	SC	4	0	0	0	0
158	1330137	Sundaravalli	23	2	2	1	6	4	18	1	0	0	0	0	0	SA	40	P	SC	5	0	0	0	PPH
159	1330879	Pavalachitra	25	2	2	1	5	4	19	0	1	0	0	0	0	SA	35	P	SC	5	0	0	0	0
160	1331102	Nalini Senthilkumar	26	2	1	2	5	5	20	1	1	0	0	0	0	SA	35	P	SC	5	0	0	0	0
161	1331120	Kanchana	30	2	1	2	7	5	22	0	1	0	0	0	0	SA	30	P	SC	5	0	0	0	0
162	1331105	Jayapriya	31	3	2	2	5	4	24	0	0	0	0	0	0	SA	30	P	SC	5	0	0	0	0
163	1300686	Selvi	24	2	2	1	5	4	26	0	0	1	0	0	0	SA	35	P	SC	5	0	0	0	0
164	1300743	Shanthy	35	3	2	1	15	5	21	1	0	0	24	0	0	SA	45	P	SC	6	SWI	PE	DD/A	0
165	1300836	Revathi Govindharajan	26	2	1	1	8	5	24	0	0	0	0	0	0	SA	40	P	SC	5	0	0	0	0
166	1300923	Beelu	28	2	1	2	6	4	23	1	1	0	0	0	0	SA	35	P	SC	5	0	0	0	0
167	1300690	Bharathidurga	29	2	2	1	6	4	26	1	0	0	0	0	0	SA	30	P	SC	5	0	0	0	HBSAG
168	1300912	Gowri	26	2	2	2	7	5	24	0	1	0	0	0	0	SA	35	P	SC	5	0	0	0	0
169	1334441	Roselinmary	25	2	1	1	7	5	27	1	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0

170	1301065	Nithyakalyani	24	2	1	2	6	4	28	0	0	1	0	0	0	SA	30	P	SC	5	0	0	0	HIV
171	1301082	Josephinnirmala	23	2	2	1	6	4	26	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
172	1301182	Angel	22	2	2	1	6	4	19	0	1	0	0	0	0	SA	30	P	SC	5	0	0	0	0
173	1301198	Leela	24	2	2	1	6	5	18	1	0	0	0	0	0	SA	35	P	SC	7	0	0	0	0
174	1301258	Kanchana	30	2	1	2	4	4	19	1	0	0	0	0	0	SA	30	P	SC	7	0	0	0	0
175	1301255	Dhanalakshmi	19	1	2	1	4	5	19	0	0	0	0	0	0	SA	30	P	SC	5	0	0	0	0
176	1301389	Sulochana	19	1	1	1	9	5	20	1	1	0	8	0	0	SA	30	P	SC	10	SWI	NG	DD/A	0
177	1300947	Noorjahan	22	2	2	1	4	5	19	1	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
178	1301456	Vidhya	24	2	1	1	6	5	20	0	0	0	0	0	0	SA	35	P	SC	6	0	0	0	0
179	1301490	Sharmila	23	2	2	1	7	4	21	0	1	0	0	0	0	SA	30	P	SC	6	0	0	0	0
180	1301437	Lavanya	24	2	2	1	8	4	22	0	0	0	6	0	0	SA	30	P	SC	5	0	0	0	0
181	1301629	Maryclara	21	2	1	1	7	4	24	0	0	0	0	0	0	SA	40	P	SC	5	0	0	0	0
182	1301649	Gayathri	28	2	2	1	8	5	21	0	0	0	4	0	0	SA	40	MV	M	6	0	0	0	0
183	1301615	Vennila	20	1	2	1	16	5	20	0	0	0	18	0	0	SA	40	P	SC	7	SWB	NG	RE	0
184	1301647	Maheswari	28	2	2	2	7	4	20	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
185	1301740	Sivagami	22	2	2	1	7	4	20	1	0	0	0	0	0	SA	30	P	SC	6	0	0	0	0
186	1301683	Sheeja	28	2	2	1	7	5	24	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
187	1301880	Banupriya	25	2	2	1	7	4	23	1	0	0	24 0	0	0	SA	30	P	M	5	0	0	0	0
188	1301979	Malathi	24	2	1	1	8	4	21	0	0	0	0	0	0	SA	30	P	SC	5	0	0	0	0
189	1302127	Vanitha	26	2	2	1	8	4	23	1	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
190	1302212	Badarnisha	25	2	2	1	8	5	22	0	0	0	0	0	0	SA	35	P	SC	6	0	0	0	0
191	1302324	Kamala	29	2	2	1	8	5	25	0	0	1	0	0	0	SA	35	P	SC	7	0	0	0	0

192	1302323	Mala	30	2	1	2	8	4	19	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
193	1302379	Saritha	26	2	1	1	8	4	18	0	0	0	0	0	0	SA	35	P	SC	6	0	0	0	0
194	1302476	Saranya	25	2	2	1	8	5	22	0	0	1	0	0	0	SA	30	P	SC	5	0	0	0	0
195	1302480	Bhagavathi	23	2	1	2	8	4	25	0	0	0	0	0	0	SA	35	P	SC	6	0	0	0	0
196	1302494	Kamatchi	28	2	2	1	7	4	26	0	0	1	0	0	0	SA	35	P	SC	7	0	0	0	0
197	1302539	Merlina	29	2	1	2	7	5	27	0	0	0	0	0	0	SA	35	P	M	6	0	0	0	0
198	1302536	Prema	26	2	2	1	7	4	28	0	0	1	0	0	0	SA	30	P	SC	6	0	0	0	0
199	1302545	Latha	25	2	2	1	7	4	29	0	1	0	0	0	0	SA	35	P	SC	5	0	0	0	0
200	1302614	Manju	23	2	2	1	7	4	24	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
201	1302644	Hemavathi	22	2	1	1	7	5	25	0	0	0	0	0	0	SA	30	P	SC	5	0	0	0	0
202	1301857	Devi	25	2	2	1	7	4	26	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
203	1302627	Jayanthi	26	2	1	1	8	4	27	0	0	0	0	0	0	SA	30	P	SC	5	0	0	0	0
204	1302658	Roja	25	2	1	1	7	4	23	0	0	0	0	0	0	SA	35	P	SC	6	0	0	0	0
205	1302674	Renuka	28	2	2	1	8	5	22	0	0	1	0	0	0	SA	30	P	SC	6	0	0	0	0
206	1322135	Rajalakshmi	22	2	2	1	12	5	22	0	0	0	14	0	0	SA	60	P	SC	8	SWI	E.COLI	DD/A	0
207	1322142	Jayasudha	19	1	1	1	6	4	23	1	0	1	0	0	0	SA	40	P	SC	6	0	0	0	0
208	1322139	Saranya	26	2	2	2	7	5	23	0	0	0	0	0	0	SA	45	P	SC	7	0	0	0	0
209	1322263	Mari	27	2	2	1	7	4	23	0	0	0	0	0	0	SA	30	P	SC	7	0	0	0	0
210	1322261	Illaimalli	29	2	2	1	8	5	21	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
211	1322103	Gayathri	26	2	2	2	8	4	20	1	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
212	1322098	Priya	26	2	2	1	9	5	19	0	0	0	0	0	0	SA	30	P	SC	5	0	0	0	0
213	1322106	Sivagami	23	2	2	1	8	4	19	0	1	0	0	0	0	GA	35	P	SC	6	0	0	0	0

214	1322456	Eswari	24	2	1	1	9	4	20	0	0	1	0	0	0	SA	35	P	SC	6	0	0	0	0
215	1322461	Bindhu	27	2	2	1	8	4	21	0	0	0	0	0	0	SA	40	P	SC	5	0	0	0	0
216	1322607	Priya	26	2	1	1	8	5	20	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
217	1322546	Malathy	24	2	2	1	9	5	23	0	0	0	0	0	0	SA	35	P	SC	6	0	0	0	0
218	1322702	Banu	23	2	2	1	9	4	20	0	0	1	0	0	0	SA	30	P	SC	6	0	0	0	0
219	1322852	Chitra	25	2	2	1	8	4	19	0	0	0	0	0	0	SA	40	P	SC	5	0	0	0	0
220	1322854	Sarala	27	2	1	1	8	5	21	0	0	0	0	0	0	SA	35	P	SC	6	0	0	0	0
221	1321893	Dhanalakshmi	28	2	2	1	9	4	21	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
222	1322862	Yamuna	28	2	2	1	8	4	23	0	0	0	0	0	0	SA	35	P	SC	6	0	0	0	0
223	1322885	Ruth	27	2	1	1	9	5	24	1	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
224	1323074	Sangeetha	29	2	2	1	8	4	20	0	0	0	0	0	0	SA	30	P	SC	6	0	0	0	0
225	1323083	Deepapriya	19	1	2	1	9	4	21	0	0	0	0	0	0	SA	45	P	SC	5	0	0	0	0
226	1323084	Valarmathy	30	2	1	1	8	4	21	0	0	0	0	0	0	SA	40	P	SC	5	0	0	0	0
227	1323120	Meharnisha	31	3	2	1	9	5	21	0	0	0	0	0	0	SA	40	P	SC	5	0	0	0	0
228	1323180	Revathi	24	2	1	1	8	4	21	1	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
229	1323190	Aswini	19	1	1	1	8	4	23	0	1	0	0	0	0	SA	35	P	SC	5	0	0	0	0
230	1322710	Kuppammal	19	1	2	1	9	5	24	0	0	0	0	0	0	SA	30	P	SC	5	0	0	0	0
231	1323197	Amsalekha	21	2	1	1	8	4	19	0	0	1	0	0	0	SA	35	P	SC	5	0	0	0	0
232	1323150	Deepa	20	1	2	1	12	5	26	0	1	0	0	0	0	SA	60	MV	SC	9	SWI	PE	DD/A	0
233	1323179	Suganthi	20	1	1	1	8	4	18	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
234	1323254	Manjula	21	2	2	2	9	4	25	0	0	0	0	0	0	SA	40	P	M	5	0	0	0	0
235	1309396	Yasmin	22	2	1	1	8	5	22	0	0	0	0	0	0	SA	30	P	SC	5	0	0	0	0

236	1309399	Shajeera	22	2	1	1	9	4	23	0	1	0	0	0	0	SA	45	P	SC	5	0	0	0	0
237	1309400	Sarala	24	2	1	1	15	5	20	1	1	0	0	0	0	SA	45	P	SC	7	SWB	STAPH	RE	0
238	1323384	Geetha	26	2	2	2	8	5	21	0	0	0	0	0	0	SA	30	P	SC	5	0	0	0	0
239	1323433	Poongodi	32	3	1	1	8	4	20	0	1	0	0	0	0	SA	35	P	SC	5	0	0	0	0
240	1323550	Poongodi	24	2	2	1	9	4	19	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
241	1359402	Kalairani	27	2	1	1	8	5	18	0	0	0	0	0	0	SA	30	P	SC	5	0	0	0	0
242	1323752	Navaneetham	28	2	2	2	9	5	19	0	0	0	0	0	0	GA	35	P	SC	5	0	0	0	0
243	1323121	Mohana	25	2	1	1	8	4	20	0	0	0	0	0	0	SA	35	P	M	5	0	0	0	0
244	1323960	Merli	27	2	1	1	8	5	23	0	0	0	10	1	1	SA	45	P	SC	7	SWI	NG	DD/A	0
245	1324326	Brindha	26	2	2	1	8	5	21	0	1	0	0	0	0	SA	30	P	SC	5	0	0	0	0
246	1324325	Priya	27	2	1	1	8	4	22	1	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
247	1324426	Kamatichi	29	2	1	1	9	4	23	0	0	0	0	0	0	SA	30	P	SC	5	0	0	0	0
248	1324433	Divya	31	3	2	1	8	4	23	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
249	1324503	Samundeshwari	32	3	1	1	9	4	24	0	0	0	0	0	0	SA	30	P	SC	5	0	0	0	0
250	1324141	chandra	19	3	2	1	8	5	21	0	0	1	0	0	0	SA	35	P	SC	5	0	0	0	0
251	1324621	Mahalakshmi	20	1	1	1	8	4	20	1	0	0	0	0	0	SA	40	P	SC	5	0	0	0	0
252	1324528	Indirani	23	2	1	1	8	4	21	1	0	0	0	0	0	SA	30	P	SC	6	0	0	0	0
252	1359408	Priya	24	2	1	1	8	5	21	0	0	0	0	0	0	SA	35	P	SC	7	0	0	0	0
253	1324629	Sathya	25	2	1	1	8	4	22	0	0	0	0	0	0	SA	30	P	SC	6	0	0	0	0
254	1324697	Sharmila	23	2	1	1	8	4	24	0	1	0	4	0	0	SA	35	P	SC	5	0	0	0	0
255	1324689	Abila	32	3	2	2	10	5	28	0	0	0	0	0	0	SA	40	P	SC	8	SWI	NG	DD/A	0
256	1324214	Renuka	21	2	2	1	8	5	23	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0

257	1324938	Lalitha	31	3	2	1	9	4	24	0	0	0	0	0	0	SA	30	P	SC	6	0	0	0	0
258	1324783	Revathi	32	3	1	1	8	4	25	0	0	0	0	0	0	SA	35	P	SC	7	0	0	0	0
259	1325190	Jayalakshmi	23	2	2	1	7	5	23	0	0	0	0	0	0	SA	40	P	SC	5	0	0	0	0
260	1325123	Shalini	24	2	1	1	8	4	19	1	0	1	3	0	0	SA	35	P	SC	5	0	0	0	0

261	1325214	Rajeshwari	24	2	1	1	8	4	19	0	0	0	0	0	0	SA	35	P	SC	6	0	0	0	0
262	1325206	Chitra	22	2	2	2	9	5	20	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
263	1325246	Mahalakshmi	23	2	1	1	8	5	23	0	0	0	0	0	0	SA	30	P	SC	5	0	0	0	0
264	1325088	Praveena	19	1	2	1	8	4	24	0	0	0	0	0	0	SA	30	P	SC	6	0	0	0	0
265	1325134	Suseela	33	3	1	1	8	4	23	0	0	0	2	0	0	SA	35	P	SC	5	0	0	0	0
266	1325320	Tamilarasi	23	2	2	1	8	4	22	0	0	0	0	0	0	SA	40	P	SC	6	0	0	0	0
267	1325307	Bhagyalakshmi	24	2	1	1	8	4	21	0	1	0	0	0	0	SA	35	MV	SC	6	0	0	0	0
268	1324612	Velankani	25	2	1	1	8	5	24	0	0	0	0	0	1	SA	40	P	SC	8	SWI	NG	DD/A	0
269	1325326	chitra	22	2	2	1	8	4	21	0	0	0	0	0	0	SA	35	P	SC	7	0	0	0	0
270	1325417	Tulasi	23	2	1	1	8	4	23	0	0	0	0	0	0	SA	35	P	SC	7	0	0	0	0
271	1325414	Ramya	21	2	1	1	8	5	21	0	0	0	0	0	0	SA	35	P	SC	7	0	0	0	0
272	1325460	Vimala	23	2	1	1	9	4	22	0	0	0	0	0	0	SA	40	P	SC	5	0	0	0	0
273	1325581	Priyanka	24	2	2	1	7	4	24	0	0	0	0	0	0	SA	40	P	SC	6	0	0	0	0
274	1325589	Deepa	25	2	1	1	7	4	23	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
275	1325601	Kumari	26	2	2	1	8	5	22	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
276	1325606	Hamitha	25	2	2	1	8	5	23	1	0	0	0	0	0	SA	40	P	SC	8	SWI	E.COLI	DD/A	0
277	1325698	Kalaarasi	26	2	1	2	8	4	21	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0

278	1325743	Kalaiselvi	27	2	1	1	8	4	19	0	0	1	0	0	0	SA	40	P	SC	5	0	0	0	0
279	1325755	Sasikala	23	2	1	1	8	5	18	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
280	1325762	Uma	28	2	1	1	8	5	22	1	0	0	0	0	0	SA	40	P	SC	5	0	0	0	0
281	1325763	Sridevi	29	2	2	2	8	5	22	0	0	0	0	0	0	SA	35	P	SC	6	0	0	0	0
282	1325925	Bhuvaneshwari	31	3	2	1	8	4	23	0	0	0	0	0	0	SA	40	P	SC	6	0	0	0	0
283	1325691	Puspalatha	21	2	2	1	8	5	22	0	0	0	0	0	0	SA	30	P	SC	6	0	0	0	0
284	1325924	Yamuna	22	2	2	1	8	4	23	0	1	0	0	0	0	SA	35	P	SC	5	0	0	0	0
285	1325897	Mariyyal	22	2	1	1	8	4	24	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
286	1325992	Dharani	19	1	1	1	8	4	23	0	0	1	4	0	0	SA	30	P	SC	5	0	0	0	0
287	1326003	Dhanashagiyam	18	1	1	1	8	5	23	0	0	1	0	0	0	SA	40	P	SC	5	0	0	0	0
288	1359407	Bhuvana	23	2	1	1	8	4	24	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
289	1326093	Luthmary	24	2	1	1	8	4	25	0	0	0	0	0	0	SA	30	P	SC	5	0	0	0	0
290	1326131	Suganya	32	3	2	1	8	4	24	0	0	0	0	0	0	SA	20	P	SC	5	0	0	0	0
291	1325804	Mythili	31	3	2	1	8	5	23	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
292	1326243	Mangammal	25	2	1	1	9	4	25	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
293	1326220	Nandhini	26	2	1	1	9	4	26	0	0	0	0	0	0	SA	30	P	SC	5	0	0	0	0
294	1326221	Jayachithra	27	2	1	1	8	4	19	0	0	0	0	0	0	SA	35	P	SC	6	0	0	0	0
295	1326222	Dhanalakshmi	28	2	1	1	8	4	21	0	0	0	0	0	0	SA	20	P	SC	5	0	0	0	0
296	1326271	Pachiyammal	29	2	1	1	9	4	22	0	0	0	0	0	0	SA	25	P	SC	5	0	0	0	0
297	1326291	Thenmozhi	31	3	2	2	8	4	24	0	0	0	0	0	0	SA	35	P	SC	6	0	0	0	0
298	1326289	Shanthi	32	3	2	2	8	4	26	0	0	0	0	0	0	SA	30	P	SC	5	0	0	0	0
299	1326322	Lakshmi	27	2	2	1	9	5	27	0	0	0	0	0	0	SA	25	MV	SC	6	0	0	0	0

300	1326323	Yamini	28	2	2	2	8	4	18	0	0	0	0	0	0	SA	25	P	SC	5	0	0	0	0
301	1326313	Sudha	29	2	1	1	9	5	26	1	0	1	12	0	0	SA	30	P	SC	7	SWI	STAPH	DD/A	0
302	1326315	Radhika	35	3	2	1	9	4	23	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
303	1326353	Saranya	22	2	1	1	7	5	24	0	1	0	2	0	0	SA	20	P	SC	5	0	0	0	0
304	1326396	Swetha	26	2	1	1	7	5	23	0	0	0	0	0	0	SA	25	P	SC	5	0	0	0	0
305	1326390	Manjula	27	2	2	1	7	5	23	0	0	0	0	0	0	SA	25	P	SC	6	0	0	0	0
306	1326379	Monica	25	2	1	1	8	5	24	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
307	1326410	Nathiya	28	2	1	1	7	5	25	0	0	0	0	0	0	SA	35	P	SC	6	0	0	0	0
308	1326425	Jaya	29	2	1	1	8	5	26	0	0	0	0	0	0	SA	25	P	SC	6	0	0	0	0
309	1326281	Rariyathubasriya	25	2	2	2	8	4	23	0	0	1	0	0	0	SA	35	P	SC	6	0	0	0	0
310	1326316	Sangeetha	26	2	1	1	7	4	21	1	0	0	0	0	0	SA	30	P	SC	5	0	0	0	0
311	1326294	Helen	27	2	1	1	8	5	21	1	0	0	4	0	0	SA	35	P	SC	5	0	0	0	0
312	1326420	Ramya	28	2	1	1	7	4	22	1	0	0	0	0	0	SA	30	P	SC	7	0	0	0	0
313	1326511	Sabitha	29	2	1	2	8	4	23	0	0	0	0	0	0	SA	35	P	SC	7	0	0	0	0
314	1326522	Geetha	31	3	2	1	7	5	23	1	0	0	9	0	0	SA	40	P	SC	8	SWI	ENTERO	DD/A	0
315	1326488	Selvamary	26	2	1	1	8	4	23	0	0	0	0	0	0	SA	25	P	SC	7	0	0	0	0
316	1326530	Sujatha	26	2	2	1	7	5	25	0	0	0	0	0	0	SA	35	P	SC	7	0	0	0	0
317	1326520	Bharathi	25	2	1	1	8	4	23	0	0	0	0	0	0	SA	30	P	M	5	0	0	0	0
318	1326403	Sasirekha	26	2	1	1	7	4	22	0	0	0	0	0	0	SA	35	P	SC	7	0	0	0	0
319	1326497	Shyamala	27	2	2	1	8	4	23	0	0	0	0	0	0	SA	30	P	SC	5	0	0	0	0
320	1326540	Umamaheshwari	28	2	2	1	7	5	24	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
321	1325956	Devi	29	2	2	1	8	4	25	0	0	0	0	0	0	SA	30	P	SC	5	0	0	0	0

322	1326582	Revathy	21	2	2	1	8	4	24	0	0	0	0	0	0	SA	35	P	SC	7	0	0	0	0
323	1326566	Priya	19	1	2	2	8	4	23	0	0	0	4	0	0	SA	35	P	SC	5	0	0	0	0
324	1326616	Priya	37	3	1	1	8	5	23	0	0	0	0	0	0	SA	30	P	SC	5	0	0	0	0
325	1326457	Rasiya	34	3	1	1	8	4	22	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
326	1326619	Salomi	31	3	2	1	7	5	22	0	0	0	0	0	0	SA	30	P	M	5	0	0	0	0
327	1326630	Latha	25	2	1	1	9	5	26	1	0	0	0	0	0	SA	35	P	SC	8	SWI	STAPH	DD/A	0
328	1326398	Stellamary	27	2	1	1	7	4	25	0	0	0	0	0	0	SA	30	P	SC	7	0	0	0	0
329	1326649	Mahalakshmi	28	2	2	1	7	5	26	0	1	0	0	0	0	SA	35	P	SC	7	0	0	0	0
330	1326556	Kavitha	29	2	1	1	7	5	21	0	0	0	0	0	0	SA	30	P	SC	7	0	0	0	0
331	1332343	Gandhimathi	31	3	2	1	7	5	19	0	0	0	0	0	0	SA	30	P	SC	7	0	0	0	0
332	1326596	Priyadarshini	26	2	1	1	7	5	18	0	0	1	0	0	0	SA	35	P	SC	7	0	0	0	0
333	1326882	Banupriya	23	2	2	1	8	4	19	0	0	0	0	0	0	SA	35	P	SC	7	0	0	0	0
334	1326991	Divya	24	2	1	1	8	4	20	0	0	0	0	0	0	SA	30	P	M	7	0	0	0	0
335	1327079	Subashini	25	2	2	1	8	4	21	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
336	1327050	kalpana	26	2	1	1	8	4	20	0	0	0	2	0	0	SA	30	P	SC	5	0	0	0	0
337	1327107	Vijayalakshmi	27	2	2	1	8	5	23	0	0	0	0	0	0	SA	35	P	M	5	0	0	0	0
338	1327231	Nasreen	28	2	1	1	8	4	23	0	0	0	0	0	0	SA	30	P	SC	5	0	0	0	0
339	1327233	Lakshmi	29	2	2	1	8	4	21	0	0	0	0	0	0	SA	35	P	M	5	0	0	0	0
340	1327237	Priya	26	2	1	1	8	5	20	0	0	0	0	0	0	SA	30	P	SC	5	0	0	0	0
341	1327246	Gomathy	25	2	2	1	9	4	21	0	0	0	0	0	0	SA	25	P	SC	5	0	0	0	0
342	1327470	Venda	29	2	1	1	8	5	26	0	1	0	6	0	0	SA	30	P	SC	5	0	0	0	0
343	1327407	Suseela	21	2	2	1	9	5	23	1	0	1	0	0	0	SA	40	P	SC	8	SWI	ENTERO	DD/A	0

344	1327032	Suganya	25	2	1	1	8	4	24	0	0	0	0	0	0	SA	35	P	SC	6	0	0	0	0
345	1327535	Sandhiya	25	2	2	1	8	4	21	0	0	0	0	0	0	SA	30	P	SC	5	0	0	0	0
346	1327591	Revathy	27	2	1	1	9	5	23	0	0	0	0	0	0	SA	35	P	SC	6	0	0	0	0
347	1327664	Anandhi	28	2	1	1	8	4	20	0	1	0	0	0	0	SA	20	P	SC	5	0	0	0	0
348	1327701	Sudha	31	3	2	1	9	5	19	0	0	0	0	0	0	SA	35	P	SC	6	0	0	0	0
349	1327726	Uma	24	2	1	1	8	4	18	0	0	0	0	0	0	SA	25	P	SC	5	0	0	0	0
350	1327732	Kalpana	28	2	1	1	9	4	24	0	0	0	0	0	0	SA	35	P	SC	6	0	0	0	0
351	1328048	Kalaiselvi	25	2	1	1	8	5	23	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
352	1328069	Nishanthi	23	2	1	1	8	4	25	0	0	0	5	0	0	SA	30	P	SC	6	0	0	0	0
353	1328073	Jayalakshmi	21	2	1	1	9	4	26	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
354	1328084	Adhilakshmi	22	2	1	2	8	5	22	0	0	0	0	0	0	SA	35	P	SC	6	0	0	0	0
355	1328074	Lakshmi	22	2	1	1	10	5	19	0	0	1	0	0	0	SA	35	P	SC	8	SWI	NG	DD/A	0
356	1327724	Noorjahan	26	2	2	1	8	4	20	0	1	0	0	0	0	SA	35	P	SC	5	0	0	0	0
357	1327968	Devi	27	2	2	1	8	4	23	1	0	0	0	0	0	SA	35	P	SC	6	0	0	0	0
358	1328102	Banumathy	25	2	2	1	8	4	24	0	0	0	0	0	0	SA	30	P	SC	5	0	0	0	0
359	1327598	Mary	28	2	2	2	8	4	26	0	0	0	0	0	0	SA	25	P	SC	6	0	0	0	0
360	1328163	Deepa	24	2	1	1	8	4	24	0	0	0	0	0	0	SA	40	P	SC	5	0	0	0	0
361	1328203	Shakila	23	2	1	1	8	4	20	0	0	0	0	0	0	SA	35	P	SC	6	0	0	0	0
362	1328224	Rajalakshmi	25	2	1	1	8	5	21	0	1	0	0	0	0	SA	35	P	SC	5	0	0	0	0
363	1328067	Nirosha	26	2	2	1	8	4	22	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
364	1328336	Velakanni	27	2	2	1	8	4	25	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
365	1328361	Aiysha	23	2	1	1	8	4	23	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0

366	1328317	Meena	24	2	1	1	8	4	27	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
367	1328464	Sanjaldevi	22	2	1	1	8	4	28	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
368	1328488	Sandhiya	26	2	2	1	8	5	21	0	0	0	0	0	0	SA	35	P	SC	7	0	0	0	0
369	1328228	Mariyammal	23	2	1	1	8	4	21	0	1	0	0	0	0	SA	35	P	SC	7	0	0	0	0
370	1328569	Sowmiya	21	2	1	1	8	4	19	0	0	1	0	0	0	SA	30	P	SC	6	0	0	0	0
371	1328655	Nagajothi	26	2	2	1	10	5	26	1	0	0	0	0	0	SA	35	P	SC	8	SWI	STAPH	DD/A	0
372	1328450	Selvarani	27	2	2	1	8	4	20	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
373	1328680	Sangeetha	25	2	1	1	9	5	19	0	0	0	0	0	0	SA	30	MV	SC	5	0	0	0	0
374	1328774	Sudha	26	2	1	1	8	5	23	0	1	0	0	0	0	SA	35	P	SC	5	0	0	0	0
375	1328916	Suguna	24	2	2	1	8	5	26	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
376	1328894	Kanchana	23	2	1	1	8	4	25	0	0	0	0	0	0	SA	40	P	SC	5	0	0	0	0
377	1328944	Kamatchi	23	2	1	2	8	5	24	0	0	0	0	0	0	SA	30	P	SC	5	0	0	0	0
378	1328933	Meena	25	2	2	1	8	4	23	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
379	1328912	Sathya	26	2	2	1	8	5	24	0	0	0	0	0	0	SA	25	P	SC	5	0	0	0	0
380	1329016	Shahin fathima	27	2	2	1	8	4	25	0	0	0	0	0	0	SA	30	P	SC	5	0	0	0	0
381	1328757	Sherlin	28	2	2	1	8	5	21	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
382	1329120	Nalliyammal	29	2	2	1	9	4	22	0	0	0	0	0	0	SA	35	P	SC	7	0	0	0	0
383	1329123	Anandhi	24	2	2	2	7	5	25	0	0	0	0	0	0	SA	30	P	SC	7	0	0	0	0
384	1329153	Anbarasi	25	2	1	1	8	5	24	0	0	0	0	0	0	SA	35	P	SC	7	0	0	0	0
385	1329193	Babitha	26	2	2	1	9	5	24	0	0	0	0	0	0	SA	40	P	SC	7	0	0	0	0
386	1329194	Gowri	27	2	1	1	7	5	23	0	0	0	0	0	0	SA	45	P	SC	7	0	0	0	0
387	1329006	Lavanya	23	2	1	1	8	5	22	0	0	0	0	0	0	SA	35	P	SC	7	0	0	0	0

388	1329284	Yamuna	25	2	2	1	9	5	26	1	0	0	0	0	0	SA	30	P	SC	7	0	0	0	0
389	1329378	Anis fathima	24	2	1	2	8	5	24	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
390	1329432	Iyswarya	27	2	2	1	9	5	25	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
391	1329425	Sangeetha	19	1	1	1	8	4	21	0	0	0	0	0	0	SA	30	P	SC	7	0	0	0	0
392	1329504	Priyanka	19	1	1	1	9	5	23	0	0	0	0	0	0	SA	35	P	SC	6	0	0	0	0
393	1329514	Vimala	26	2	1	1	8	5	26	0	0	0	0	0	0	SA	30	P	SC	7	0	0	0	0
394	1329558	Sangeetha	23	2	1	1	9	5	27	1	0	1	0	0	0	SA	35	P	SC	6	0	0	0	0
395	1329587	Amutha	22	2	1	1	7	5	24	0	0	0	0	0	0	SA	40	P	SC	5	0	0	0	0
396	1329632	Muthammal	22	2	1	1	8	4	23	0	0	0	0	0	0	SA	45	P	SC	7	0	0	0	0
397	1329627	Muniyammal	24	2	2	1	9	5	23	0	0	0	0	0	0	SA	35	P	SC	6	0	0	0	0
398	1329619	Saraswathi	25	2	1	1	8	4	21	0	0	0	0	0	0	SA	30	P	SC	5	0	0	0	0
399	1329158	Reena	26	2	2	1	7	4	22	0	0	0	0	0	0	SA	35	P	SC	7	0	0	0	0
400	1329728	Sangeetha	27	2	1	1	9	5	23	1	0	0	0	0	0	SA	25	P	SC	6	0	0	0	0
401	1329250	Radha	32	3	2	1	7	4	24	0	0	0	0	0	0	SA	30	P	SC	5	0	0	0	0
402	1329000	Vanithamani	33	3	2	1	8	4	25	0	0	0	0	0	0	SA	35	P	SC	7	0	0	0	0
403	1329792	Saradha	25	2	1	1	9	5	25	0	0	0	0	0	0	SA	30	P	SC	5	0	0	0	0
404	1329249	Renuka	27	2	1	1	8	4	26	0	0	0	6	0	0	SA	25	P	SC	7	0	0	0	0
405	1329796	Kasthuri	25	2	2	1	7	4	21	0	0	0	0	0	0	SA	30	P	SC	5	0	0	0	0
406	1329779	Nathiya	28	2	1	1	8	5	21	0	0	0	0	0	0	SA	35	P	SC	7	0	0	0	0
407	1329802	Rashitha	29	2	2	2	8	4	19	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
408	1329820	Chinnammal	30	2	2	1	8	4	20	0	0	0	0	0	0	SA	30	P	SC	6	0	0	0	0
409	1329838	Priya	33	3	2	1	8	5	20	0	0	0	0	0	0	SA	35	P	SC	7	0	0	0	0

410	1329251	Vijayalalitha	31	3	1	1	8	5	22	0	0	0	0	0	0	SA	30	P	SC	5	0	0	0	0
411	1314715	Swanalatha	24	2	2	1	9	5	20	0	1	0	0	0	0	SA	30	P	SC	5	0	0	0	0
412	1314767	Srimathi Kalaimani	19	1	2	1	8	4	23	0	0	1	0	0	0	SA	40	P	SC	7	0	0	0	0
413	1335361	Rajathi	19	1	1	1	16	5	23	0	0	1	0	0	0	SA	35	P	SC	10	SW1	NG	DD/A	0
414	1336574	Rukku	28	2	1	1	8	4	22	0	0	0	0	0	0	SA	40	P	SC	5	0	0	0	0
415	1336170	Krishnaveni	30	2	1	1	8	4	23	0	0	0	0	0	0	SA	45	P	SC	5	0	0	0	0
416	1336611	Pusparani	23	2	1	1	7	4	26	0	0	1	0	0	0	SA	30	P	SC	5	0	0	0	0
417	1336343	Prmya	29	2	2	1	8	4	22	1	0	0	0	0	0	SA	40	P	SC	7	0	0	0	0
418	1335065	Alamelumangai	23	2	2	1	8	5	24	0	0	0	0	0	0	SA	45	P	SC	5	0	0	0	ASTHMA
419	1335064	Thenmozhi	20	1	2	1	7	4	24	0	0	0	0	0	0	SA	50	P	SC	5	0	0	0	0
420	1334914	Praveena	25	2	1	1	8	4	30	0	0	1	0	0	0	SA	40	P	SC	10	SWB	KLEBSIELLA	RE	0
421	1335872	Girijarani	22	2	2	1	7	5	25	1	0	0	0	0	0	SA	35	P	SC	7	0	0	0	0
422	1335888	Mahima	23	2	1	1	8	3	26	0	0	0	0	0	0	SA	40	P	SC	7	0	0	0	0
423	1336400	Najina Bathool	38	3	2	1	8	4	22	0	1	0	10	0	0	SA	45	P	SC	10	SWB	KLEBSIELLA	RE	0
424	1336609	Kalaipriya	20	1	2	1	8	4	28	0	1	0	0	0	0	SA	35	P	SC	5	0	0	0	0
425	1336518	Subatra	25	2	2	1	8	4	24	0	1	1	0	0	0	SA	40	P	SC	5	0	0	0	0
426	1336519	Supriya	24	2	2	1	7	4	25	0	0	1	0	0	0	SA	30	P	SC	5	0	0	0	0
427	1336520	Susma	23	2	2	1	8	3	18	0	1	0	0	0	0	SA	40	P	SC	7	0	0	0	0
428	1336103	Kabila	23	2	1	1	8	4	20	0	0	0	6	0	0	SA	60	P	SC	5	0	0	0	0
429	1336097	Kanmani	32	3	2	1	7	4	20	1	0	0	0	0	0	SA	40	P	SC	5	0	0	0	0
430	1333531	Jayarani	25	2	2	1	8	4	23	1	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
431	1335490	Beulia	28	2	2	2	7	4	22	0	1	1	0	0	0	SA	45	P	SC	5	0	0	0	0

432	1334742	Jayaseeli	20	1	2	1	7	3	22	0	1	0	0	0	0	SA	35	P	SC	5	0	0	0	0
433	1335508	Swetha	20	1	2	2	25	4	24	1	0	0	0	0	0	SA	35	P	SC	7	0	0	0	0
434	1334504	Prathheeba	23	2	2	1	9	4	17.6	0	0	0	0	0	0	SA	30	P	SC	6	0	0	0	0
435	1335557	Panjala	22	2	2	2	14	4	24	0	0	1	0	0	0	SA	35	P	SC	7	0	0	0	0
436	1335633	Manorama	28	2	1	1	9	4	22	0	1	0	8	0	0	SA	30	P	SC	7	0	0	0	0
437	1334897	Akila menon	23	2	2	1	8	4	22	0	0	0	0	0	0	SA	35	P	SC	7	0	0	0	0
438	1330469	Priyanka	24	2	2	1	8	3	28	0	0	0	0	0	0	SA	40	P	SC	7	0	0	0	0
439	1338764	Chellamani	20	1	2	2	8	4	28	0	1	0	0	0	0	SA	35	P	SC	7	0	0	0	0
440	1338796	Sittu	26	2	2	1	7	4	20	0	0	0	0	0	0	SA	40	P	SC	7	0	0	0	0
441	1338752	Chitra kumar	22	2	2	1	7	3	18	0	0	0	0	0	0	SA	45	P	SC	7	0	0	0	0
442	1336310	Akirthi	30	2	2	2	9	4	21	0	0	0	0	0	0	SA	35	P	SC	7	0	0	0	0
443	1334753	Bhaghalakshmi	30	2	2	1	20	5	44	0	0	1	0	0	0	SA	30	P	SC	7	SWB	KLEBSIELLA	RE	0
444	1336530	Saraswathi	20	1	2	2	30	5	22	0	0	0	0	0	0	SA	35	P	SC	7	0	0	0	0
445	1336525	Anjala	24	2	2	1	8	5	19	0	0	0	0	0	0	SA	40	P	SC	10	0	0	0	0
446	1336493	Kumari Kannan	20	1	1	1	8	5	22	0	0	1	0	0	0	SA	40	P	SC	7	0	0	0	0
447	1337862	Muthulakshmi	26	2	1	1	9	5	24	0	0	0	0	0	0	SA	45	P	SC	7	0	0	0	0
448	1336373	Meenakumari	30	2	1	1	9	5	23	0	0	0	0	0	0	SA	40	P	SC	7	0	0	0	0
449	1336323	Dhaanalakshmi	28	2	2	1	8	4	24	0	1	0	0	0	0	SA	55	P	SC	7	0	0	0	0
450	1336334	Sheela	22	2	2	1	7	4	26	0	0	0	0	0	0	SA	30	P	SC	7	0	0	0	0
451	1335355	Jasmine Mary	33	3	2	1	7	5	28	0	0	0	0	0	0	SA	35	P	SC	7	0	0	0	0
452	1336482	Keerthana	25	2	2	1	8	4	28	0	0	0	4	0	0	SA	35	P	SC	7	0	0	0	PPH
453	1330940	Jebitha	26	2	1	1	8	4	26	0	0	0	8	0	0	SA	40	P	SC	7	0	0	0	0

454	1338313	Menaka	24	2	2	0	8	5	20	0	1	0	0	0	0	SA	35	P	SC	7	0	0	0	0
455	1330442	Madhavi	26	2	2	1	8	4	28	0	0	0	4	0	0	SA	40	P	SC	7	0	0	0	0
456	1339567	Jothilakshmi	27	2	2	1	8	4	18	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
457	1330453	Manimegalai	28	2	1	1	7	5	20	0	0	0	0	0	0	SA	30	P	SC	5	0	0	0	0
458	1339758	Indhumathi	23	2	1	1	12	5	22	1	0	1	18	0	0	SA	90	P	SC	5	SWI	PE	DD/A	0
459	1338115	Latha Rajesh	22	2	2	1	10	5	24	0	0	1	0	0	0	SA	40	P	SC	5	SWI	NG	DD/A	0
460	1338317	Vinodhini	24	2	2	1	7	5	26	0	0	0	4	0	0	SA	35	P	SC	7	0	0	0	0
461	1338319	Manjula	19	1	2	2	7	4	24	0	0	0	0	0	0	SA	35	P	SC	7	0	0	0	0
462	1338168	Akliandeshwari	30	2	1	1	15	5	24	1	0	1	0	0	0	SA	45	P	SC	7	SWI	E.COLI	DD/A	0
463	1334195	Lavanya	22	2	2	1	8	4	23	0	0	0	0	0	0	SA	30	P	SC	5	0	0	0	0
464	1334020	Rani	24	2	2	1	8	4	24	0	0	0	0	0	0	SA	30	P	SC	5	0	0	0	0
465	1335367	Rukmani	25	2	1	1	8	4	23	0	0	0	0	0	0	GA	30	P	SC	5	0	0	0	0
466	1334942	Ashwini	32	3	2	1	8	5	20	0	0	0	0	0	0	SA	45	P	SC	7	0	0	0	0
467	1335364	Bhuvaneshwari	26	2	2	1	8	4	19	0	0	1	0	0	0	SA	35	MV	SC	7	0	0	0	0
468	1334989	Deepa	19	2	2	2	7	4	24	0	0	0	0	0	0	SA	35	P	SC	7	0	0	0	0
469	1334543	Sathyapriya	24	2	1	1	8	4	26	0	0	0	0	0	0	SA	40	P	SC	4	0	0	0	0
470	1335939	Srojini	23	2	1	1	20	5	22	1	0	1	10	0	1	SA	70	P	SC	7	SWI	KLEBSIELLA	DD/A	0
471	1334546	Devisri	23	2	2	1	8	4	27	0	1	0	0	0	0	SA	30	P	M	5	0	0	0	0
472	1334544	Gayathri	26	2	1	1	8	4	23	0	0	0	0	0	0	SA	30	P	SC	5	0	0	0	0
473	1334426	Geethanjali	27	2	2	1	8	4	23	0	0	0	0	0	0	SA	40	P	SC	5	0	0	0	0
474	1334320	Maheshwari	24	2	2	1	8	4	22	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
475	1336112	Hemavathi	19	1	1	1	20	5	23	0	0	0	0	0	0	SA	30	P	SC	7	0	0	0	0

476	1333889	Sampoornam	23	2	1	1	9	3	20	0	1	1	2	0	0	SA	30	P	SC	7	0	0	0	0
477	1333665	Savithri	28	2	2	2	9	5	19	0	0	0	0	0	0	SA	35	P	SC	8	0	0	0	0
478	1334661	Jenisha	29	2	2	1	7	4	22	0	0	0	0	0	0	SA	30	P	M	4	0	0	0	0
479	1334656	Kalpana	23	2	2	1	8	5	19	0	0	1	6	0	0	SA	30	P	SC	7	0	0	0	0
480	1332727	Jeevitha	24	2	1	1	8	4	20	0	1	0	0	0	0	SA	40	P	SC	5	0	0	0	0
481	1332212	Suganthi	24	2	1	1	14	5	26	0	0	1	0	0	0	SA	45	P	SC	10	SWB	STAPH	RE	0
482	1336114	Saranya	23	2	1	1	8	4	21	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
483	1333625	Lalitha Kumari	22	2	1	1	9	4	22	0	0	0	4	0	0	SA	35	P	SC	5	0	0	0	0
484	1334321	Gomathi	21	2	2	2	8	4	20	0	0	1	8	0	0	SA	30	P	SC	11	SWB	STAPH	RE	0
485	1334279	Monika	23	2	2	1	8	4	22	1	0	0	0	0	0	SA	30	P	SC	5	0	0	0	0
486	1334227	Nirmala	24	2	2	1	8	4	18	0	0	1	0	0	0	SA	35	P	SC	5	0	0	0	0
487	1334191	Ragini Devi	24	2	1	1	7	5	19	0	0	0	4	0	0	SA	30	P	SC	5	0	0	0	0
488	1334535	Kamli	28	2	2	1	8	5	24	0	0	0	0	0	0	SA	30	P	SC	7	0	0	0	0
489	1334526	Suguna	23	2	1	1	7	4	24	1	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
490	1339815	Krithika	25	2	2	1	9	3	23	0	1	0	3	0	0	SA	30	MV	SC	5	0	0	0	0
491	1330465	Sudha priya	26	2	2	1	8	4	26	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
492	1331248	Muniyammal	23	2	2	1	9	5	24	0	0	0	4	0	0	SA	35	P	SC	3	0	0	0	0
493	1336129	Nandhini	22	2	1	1	16	5	26	1	0	1	0	0	0	SA	35	P	SC	10	SWB	KLEBSIELLA	RE	0
494	1330943	Pratheema	26	2	1	2	7	4	23	0	1	0	0	0	0	SA	35	P	SC	7	0	0	0	0
495	1330899	Prem Sundari	27	2	2	1	8	5	24	1	0	0	0	0	0	SA	35	P	M	5	0	0	0	0
496	1334351	Sangavi	24	2	1	1	9	5	25	0	1	0	0	0	0	SA	30	P	SC	5	0	0	0	0
497	1331184	Radha	25	2	2	1	8	5	18	0	0	0	0	0	0	GA	35	P	SC	7	0	0	0	0

498	1330464	Sangeetha	27	2	2	1	9	5	19	0	0	0	0	0	0	SA	30	P	SC	3	0	0	0	PUO
499	1331287	Ambiga	29	2	1	1	8	3	22	0	1	1	0	0	0	SA	40	P	SC	5	0	0	0	0
500	1331291	Saradha	23	2	2	1	8	5	23	0	0	0	0	0	0	SA	30	P	SC	5	0	0	0	0
501	1339759	Sarala	22	2	2	1	9	4	24	0	1	0	0	0	0	SA	35	P	SC	3	0	0	0	0
502	1331792	Divyadarshini	21	2	2	1	9	5	19	0	0	0	0	0	0	SA	30	P	SC	5	0	0	0	0
503	1334772	Eswari	19	1	1	1	8	4	23	1	0	0	6	0	0	SA	35	P	SC	5	0	0	0	0
504	1336123	Haritha	19	1	2	1	8	5	22	0	1	0	0	0	0	SA	40	P	SC	5	0	0	0	0
505	1331281	Komalavalli	20	1	2	1	8	4	24	0	1	0	0	0	0	SA	35	P	SC	5	0	0	0	0
506	1330311	Revathy	25	2	1	1	8	5	23	0	0	0	0	0	0	SA	35	P	M	3	0	0	0	0
507	1336056	Sowmya	30	2	1	1	9	5	24	1	1	0	0	0	0	SA	30	P	SC	5	0	0	0	0
508	1339865	Sharmila	25	2	2	1	8	4	23	0	0	1	0	0	0	SA	35	P	SC	5	0	0	0	0
509	1337604	Pavitra	26	2	1	1	9	3	22	0	1	0	5	0	0	SA	35	P	SC	5	0	0	0	0
510	1334620	Rajeshwari	27	2	2	2	8	5	21	0	0	1	0	0	0	SA	20	P	SC	5	0	0	0	0
511	1338740	Madhumitha	31	3	1	1	9	4	19	1	1	0	0	0	0	SA	35	P	SC	5	0	0	0	0
512	1333867	Veeralakshmi	24	2	1	1	15	5	23	0	0	1	18	1	1	SA	90	P	SC	10	SWB	KLEBSIELLA	RE	0
513	1334122	Tamilselvi	25	2	2	1	8	5	23	1	1	0	6	0	0	SA	40	P	SC	5	0	0	0	0
514	1333559	Shakila	26	2	2	1	8	4	22	0	0	1	0	0	0	SA	45	P	SC	5	0	0	0	0
515	1331332	Renuka Devi	27	2	1	1	8	5	19	0	1	0	0	0	0	SA	35	P	SC	6	0	0	0	0
516	1338242	Archana	25	2	2	1	12	3	23	1	0	0	18	0	0	SA	60	P	SC	10	SWI	E.COLI	DD/A	0
517	1333742	Kodhai	22	2	1	1	9	4	18	1	0	1	0	0	0	SA	40	P	SC	8	0	0	0	0
518	1335350	Uma	25	2	2	2	9	5	22	0	1	0	3	0	0	SA	35	P	SC	5	0	0	0	0
519	1331999	Sripriya	24	2	2	1	8	4	24	0	0	0	2	0	0	SA	30	P	SC	8	0	0	0	0

520	1332387	Vandhana	30	2	1	1	8	4	25	0	0	1	0	0	0	SA	35	P	SC	5	0	0	0	0
521	1332386	Varalakshmi	24	2	1	1	8	5	23	0	0	0	0	0	0	SA	30	P	SC	6	0	0	0	0
522	1332430	Farzana	26	2	2	1	8	3	24	0	0	0	0	s	0	SA	30	P	SC	5	0	0	0	0
523	1332511	Vidya Sridar	24	2	1	1	9	4	24	0	0	0	0	0	0	SA	35	P	SC	3	0	0	0	0
524	1332219	Anupriya	23	2	1	1	8	5	25	0	0	0	0	0	0	SA	30	P	SC	3	0	0	0	0
525	1332216	Soundarya	22	2	1	1	8	5	23	0	0	0	0	0	0	SA	30	P	SC	3	0	0	0	0
526	1332559	Vishnu Priya	25	2	1	1	7	4	22	0	1	0	4	0	0	SA	35	P	SC	3	0	0	0	0
527	1332831	Sivaranjani	26	2	2	1	8	3	27	0	0	1	0	0	0	SA	40	P	SC	5	0	0	0	0
528	1332923	Banupriya	19	1	2	1	8	4	19	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
529	1332968	Gowthami	18	1	2	1	9	5	18	0	0	0	0	0	0	SA	30	P	SC	5	0	0	0	0
530	1332956	Rubini	20	1	2	2	8	4	23	0	0	1	0	0	0	SA	30	P	SC	5	0	0	0	0
531	1333134	Sreeja	21	2	2	1	8	4	22	0	0	0	3	0	0	SA	35	P	SC	5	0	0	0	0
532	1333136	Kalaipriya	27	2	2	1	9	4	22	0	1	0	6	0	0	SA	30	P	SC	5	0	0	0	0
533	1333389	Kalaiselvi	26	2	1	1	8	5	24	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
534	1333409	Vanithasre	19	1	1	1	8	4	26	1	1	0	0	0	0	SA	30	P	SC	5	0	0	0	0
535	1333605	Manoranjani	23	2	2	1	9	4	27	1	0	0	0	0	0	SA	40	P	SC	5	0	0	0	0
536	1333665	Sivagami	25	2	1	1	8	3	23	0	1	0	0	0	0	SA	35	P	SC	3	0	0	0	0
537	1333731	Abjrami	24	2	1	1	8	5	24	0	0	1	0	0	0	SA	30	P	SC	3	0	0	0	0
538	1333933	Venkatalakshmi	22	2	1	1	12	5	30	0	1	0	0	0	0	SA	40	P	SC	10	SWB	STAPH	RE	0
539	1333821	Anuradha	25	2	2	1	8	4	27	0	0	0	0	0	0	SA	30	P	SC	6	0	0	0	0
540	1333623	Indirni	20	1	2	1	8	5	22	1	1	0	0	0	0	SA	35	P	SC	5	0	0	0	0
541	1334547	Sunitha	24	2	2	1	8	4	24	0	0	0	0	0	0	SA	30	P	SC	5	0	0	0	0

542	1334581	Sujatha Anbalagan	29	2	2	1	8	5	25	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
543	1334573	Preetha	30	2	2	1	8	5	20	0	0	0	0	0	0	SA	35	P	SC	6	0	0	0	0
544	1334628	Praveena	31	3	2	1	8	3	22	0	1	0	0	0	0	SA	30	P	SC	5	0	0	0	0
545	1334633	Ranjani	28	2	1	1	8	5	22	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
546	1334643	Shanmugapriya	22	2	2	1	8	4	25	0	0	0	0	0	0	SA	40	P	SC	5	0	0	0	0
547	1334487	Kanchana	21	2	2	1	9	4	26	0	0	0	0	0	0	SA	40	P	SC	5	0	0	0	0
548	1334662	Kamakshi	20	1	2	1	8	4	22	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
549	1334663	Visalakshi	19	1	2	1	7	5	24	0	0	0	0	0	0	SA	30	P	SC	5	0	0	0	0
550	1334889	Pooja	23	2	1	2	9	3	25	0	1	0	0	0	0	SA	35	P	SC	5	0	0	0	0
551	1334837	Priyadarshini	24	2	2	1	8	4	24	0	0	0	4	0	0	SA	40	P	SC	5	0	0	0	0
552	1334824	Poornima	24	2	2	1	7	4	18	0	0	0	6	0	0	SA	35	P	SC	5	0	0	0	0
553	1335160	Mugilvizhi	26	2	2	2	8	5	26	0	0	0	0	0	0	SA	30	P	SC	5	0	0	0	0
554	1335272	charulatha	24	2	2	1	9	4	23	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
555	1335274	Thilagavathy	28	2	1	1	8	4	26	0	1	0	0	0	0	SA	35	P	SC	3	0	0	0	0
556	1335569	yuvarani	30	2	2	1	7	4	25	0	1	0	0	0	0	SA	40	P	SC	5	0	0	0	0
557	1335573	yogalakhmi	31	3	2	1	9	5	24	0	1	1	0	0	0	SA	35	P	SC	6	0	0	0	0
558	1335695	Divyabharathi	27	2	2	1	8	4	24	1	1	0	0	0	0	SA	30	P	SC	5	0	0	0	0
559	1335698	Venthamarai	26	2	1	1	7	5	26	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
560	1339417	Ponpavithra	32	3	2	1	8	5	23	0	0	0	5	0	0	SA	40	P	SC	5	0	0	0	0
561	1336051	Mangalswathi	23	2	1	1	8	4	22	1	0	1	0	0	0	SA	30	P	SC	6	0	0	0	0
562	1336219	Anjana	18	1	2	1	8	4	26	0	0	0	2	0	0	SA	35	P	SC	5	0	0	0	0
563	1335939	Velankkani	22	2	2	1	7	4	24	1	0	1	0	0	0	SA	30	P	SC	5	0	0	0	0

564	1336045	Vasanthapriya	18	1	2	1	6	5	22	1	1	0	0	0	0	SA	35	P	SC	4	0	0	0	0
565	1339391	Ayesha	23	2	2	1	7	4	24	1	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
566	1330734	Subbulakshmi	24	2	2	1	6	5	24	0	0	0	0	0	0	SA	40	P	SC	5	0	0	0	0
567	1330737	Rossey	23	2	2	1	6	4	28	1	0	0	0	0	0	SA	30	P	SC	4	0	0	0	0
568	1331081	Shiney prem	22	2	2	2	6	5	29	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
569	1330137	Rathnaveni	19	1	2	2	7	5	19	0	0	0	0	0	0	SA	30	P	SC	4	0	0	0	0
570	1330879	Meenakshi	23	2	2	1	6	4	18	1	0	0	0	0	0	SA	40	P	SC	5	0	0	0	PPH
571	1331102	Semmalarjothi	25	2	2	1	5	4	19	0	1	0	0	0	0	SA	35	P	SC	5	0	0	0	0
572	1331120	Fathima	26	2	1	2	5	5	20	1	1	0	0	0	0	SA	35	P	SC	5	0	0	0	0
573	1331105	Poovizhi	30	2	1	2	7	5	22	0	1	0	0	0	0	SA	30	P	SC	5	0	0	0	0
574	1330743	Kalaivani	31	3	2	2	5	4	24	0	0	0	0	0	0	SA	30	P	SC	5	0	0	0	0
575	1330836	Nithyakalyani	24	2	2	1	5	4	26	0	0	1	0	0	0	SA	35	P	SC	5	0	0	0	0
576	1330923	Komalavalli	35	3	2	1	8	5	21	0	0	0	0	0	0	SA	35	P	SC	6	0	0	0	0
577	1330690	Jothirani	26	2	1	1	8	5	24	0	0	0	0	0	0	SA	40	P	SC	5	0	0	0	0
578	1330912	Tejasree	28	2	1	2	6	4	23	1	1	0	0	0	0	SA	35	P	SC	5	0	0	0	0
579	1334441	Vijaya	29	2	2	1	6	4	26	1	0	0	0	0	0	SA	30	P	SC	5	0	0	0	HBSAG
580	1331065	Meeravasudevan	26	2	2	2	7	5	24	0	1	0	0	0	0	SA	35	P	SC	5	0	0	0	0
581	1331082	Anusha	25	2	1	1	7	5	27	1	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
582	1331182	Shyalaja	24	2	1	2	6	4	28	0	0	1	0	0	0	SA	30	P	SC	5	0	0	0	HIV
583	1331198	Tiruvani	23	2	2	1	6	4	26	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
584	1331258	Valarmathi	22	2	2	1	6	4	19	0	1	0	0	0	0	SA	30	P	SC	5	0	0	0	0
585	1331255	Shenbagam	24	2	2	1	6	5	18	1	0	0	0	0	0	SA	35	P	SC	4	0	0	0	0

586	1331389	Nivedhitha	30	2	1	2	4	4	19	1	0	0	0	0	0	SA	30	P	SC	4	0	0	0	0
587	1330947	Mumtaj begum	19	1	2	1	4	5	19	0	0	0	0	0	0	SA	30	P	SC	5	0	0	0	0
588	1331456	Ranjitha	19	1	1	1	9	5	20	0	0	0	0	0	0	SA	30	P	SC	6	0	0	0	0
589	1331490	Tharani	22	2	2	1	4	5	19	1	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
590	1331437	Kuyili	24	2	1	1	6	5	20	0	0	0	0	0	0	SA	35	P	SC	6	0	0	0	0
591	1331629	Vadivukarasi	23	2	2	1	7	4	21	0	1	0	0	0	0	SA	30	P	SC	6	0	0	0	0
592	1331649	Devika	24	2	2	1	8	4	22	0	0	0	6	0	0	SA	30	P	SC	5	0	0	0	0
593	1331615	Nirosha	21	2	1	1	7	4	24	0	0	0	0	0	0	SA	40	P	SC	5	0	0	0	0
594	1331647	Amala	28	2	2	1	8	5	21	0	0	0	4	0	0	SA	40	MV	M	6	0	0	0	0
595	1331740	Vaishnavi	20	1	2	1	9	5	20	0	0	0	0	0	0	SA	30	P	SC	7	0	0	0	0
596	1331683	Mariya	28	2	2	2	7	4	20	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
597	1331880	Pavalakodi	22	2	2	1	7	4	20	1	0	0	0	0	0	SA	30	P	SC	6	0	0	0	0
598	1331979	Manjusha	28	2	2	1	7	5	24	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
599	1332127	Padmarekha	25	2	2	1	7	4	23	1	0	0	0	0	0	SA	30	P	M	5	0	0	0	0
600	1332324	Ponniyammal	26	2	2	1	8	4	23	1	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
601	1332323	Maragatham	25	2	2	1	8	5	22	0	0	0	0	0	0	SA	35	P	SC	6	0	0	0	0
602	1332379	Sabitha	29	2	2	1	8	5	25	0	0	1	0	0	0	SA	35	P	SC	7	0	0	0	0
603	1332476	Sulokshana	30	2	1	2	8	4	19	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
604	1332480	Veena	26	2	1	1	8	4	18	0	0	0	0	0	0	SA	35	P	SC	6	0	0	0	0
605	1332494	Malathi	25	2	2	1	8	5	22	0	0	1	0	0	0	SA	30	P	SC	5	0	0	0	0
606	1332539	Supraja	23	2	1	2	8	4	25	0	0	0	0	0	0	SA	35	P	SC	6	0	0	0	0
607	1332536	Maduri	28	2	2	1	7	4	26	0	0	1	0	0	0	SA	35	P	SC	7	0	0	0	0

608	1332545	Sujitha	29	2	1	2	7	5	27	0	0	0	0	0	0	SA	35	P	M	6	0	0	0	0
609	1332614	Vasuki	26	2	2	1	7	4	28	0	0	1	0	0	0	SA	30	P	SC	6	0	0	0	0
610	1332644	Sherlin	25	2	2	1	7	4	29	0	1	0	0	0	0	SA	35	P	SC	5	0	0	0	0
611	1331857	Kannagi	23	2	2	1	7	4	24	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
612	1336384	Dessammal	23	2	1	1	7	4	22	0	0	0	0	0	0	SA	30	P	SC	5	0	0	0	0
613	1336434	Vinitha	35	3	2	1	9	4	23	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
614	1336550	Kannama	22	2	1	1	7	5	24	0	1	0	2	0	0	SA	20	P	SC	5	0	0	0	0
615	1336404	Oorvasi	26	2	1	1	7	5	23	0	0	0	0	0	0	SA	25	P	SC	5	0	0	0	0
616	1336141	Sugirtha	27	2	2	1	7	5	23	0	0	0	0	0	0	SA	25	P	SC	6	0	0	0	0
617	1336960	Indhuja	25	2	1	1	8	5	24	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
618	1336346	Vennila	28	2	1	1	7	5	25	0	0	0	0	0	0	SA	35	P	SC	6	0	0	0	0
619	1336345	Akshaya	29	2	1	1	8	5	26	0	0	0	0	0	0	SA	25	P	SC	6	0	0	0	0
620	1336446	Narmadha	25	2	2	2	8	4	23	0	0	1	0	0	0	SA	35	P	SC	6	0	0	0	0
621	1336433	Mamtha	26	2	1	1	7	4	21	1	0	0	0	0	0	SA	30	P	SC	5	0	0	0	0
622	1336503	Gangadevi	27	2	1	1	8	5	21	1	0	0	4	0	0	SA	35	P	SC	5	0	0	0	0
623	1336141	Vanaroja	28	2	1	1	7	4	22	1	0	0	0	0	0	SA	30	P	SC	7	0	0	0	0
624	1336641	Madialaghi	29	2	1	2	8	4	23	0	0	0	0	0	0	SA	35	P	SC	7	0	0	0	0
625	1336548	Shaktidevi	31	3	2	1	7	5	23	1	0	0	9	0	0	SA	40	P	SC	10	SWI	ENTERO	DD/A	0
626	1336408	Sumathi	26	2	1	1	8	4	23	0	0	0	0	0	0	SA	25	P	SC	7	0	0	0	0
627	1336649	Prabhavathi	26	2	2	1	7	5	25	0	0	0	0	0	0	SA	35	P	SC	7	0	0	0	0
628	1336697	Ambujam	25	2	1	1	8	4	23	0	0	0	0	0	0	SA	30	P	M	5	0	0	0	0
629	1336689	Harini	26	2	1	1	7	4	22	0	0	0	0	0	0	SA	35	P	SC	7	0	0	0	0

630	1336414	Nauseen Fathima	27	2	2	1	8	4	23	0	0	0	0	0	0	SA	30	P	SC	5	0	0	0	0
631	1336938	Soniya	28	2	2	1	7	5	24	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
632	1336783	Nadhiya	29	2	2	1	8	4	25	0	0	0	0	0	0	SA	30	P	SC	5	0	0	0	0
633	1335190	Sofiyaa	21	2	2	1	8	4	24	0	0	0	0	0	0	SA	35	P	SC	7	0	0	0	0
634	1336143	Illakiya	19	1	2	2	8	4	23	0	0	0	4	0	0	SA	35	P	SC	5	0	0	0	0
635	1336414	Punitha	37	3	1	1	8	5	23	0	0	0	0	0	0	SA	30	P	SC	5	0	0	0	0
636	1336406	Sussela	34	3	1	1	8	4	22	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
637	1336446	Janaki	31	3	2	1	7	5	22	0	0	0	0	0	0	SA	30	P	M	5	0	0	0	0
638	1336088	Shreya	25	2	1	1	9	5	26	1	0	0	0	0	0	SA	35	P	SC	10	SWI	STAPH	DD/A	0
639	1336134	Mitra	27	2	1	1	7	4	25	0	0	0	0	0	0	SA	30	P	SC	5	0	0	0	0
640	1336340	Kanimozhi	28	2	2	1	7	5	26	0	1	0	0	0	0	SA	35	P	SC	7	0	0	0	0
641	1336307	Andal	29	2	1	1	7	5	21	0	0	0	0	0	0	SA	30	P	SC	5	0	0	0	0
642	1336614	Grace	31	3	2	1	7	5	19	0	0	0	0	0	0	SA	30	P	SC	7	0	0	0	0
643	1336346	Jessymary	26	2	1	1	7	5	18	0	0	1	0	0	0	SA	35	P	SC	7	0	0	0	0
644	1336417	Lekha	23	2	2	1	8	4	19	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
645	1336419	Subashini	24	2	1	1	8	4	20	0	0	0	0	0	0	SA	30	P	M	7	0	0	0	0
646	1336460	Dhakshayini	25	2	2	1	8	4	21	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
647	1336581	Thirupurasundari	26	2	1	1	8	4	20	0	0	0	2	0	0	SA	30	P	SC	5	0	0	0	0
648	1336589	Mahadevi	27	2	2	1	8	5	23	0	0	0	0	0	0	SA	35	P	M	5	0	0	0	0
649	1336601	Rohini	28	2	1	1	8	4	23	0	0	0	0	0	0	SA	30	P	SC	5	0	0	0	0
650	1336606	Bindhumadavi	29	2	2	1	8	4	21	0	0	0	0	0	0	SA	35	P	M	5	0	0	0	0
651	1336696	Rehana	26	2	1	1	8	5	20	0	0	0	0	0	0	SA	30	P	SC	5	0	0	0	0

652	1336743	Yasmeen	25	2	2	1	9	4	21	0	0	0	0	0	0	SA	25	P	SC	5	0	0	0	0
653	1336755	Mullai	29	2	1	1	8	5	26	0	1	0	6	0	0	SA	30	P	SC	5	0	0	0	0
654	1336764	Thillaikarasi	21	2	2	1	9	5	23	1	0	1	0	0	0	SA	40	P	SC	12	SWI	ENTERO	DD/A	0
655	1336763	Usha	25	2	1	1	8	4	24	0	0	0	0	0	0	SA	35	P	SC	6	0	0	0	0
656	1336945	Hirudhaya	25	2	2	1	8	4	21	0	0	0	0	0	0	SA	30	P	SC	5	0	0	0	0
657	1336691	Nancy	27	2	1	1	9	5	23	0	0	0	0	0	0	SA	35	P	SC	6	0	0	0	0
658	1336944	Desika	28	2	1	1	8	4	20	0	1	0	0	0	0	SA	20	P	SC	5	0	0	0	0
659	1336897	Annakili	31	3	2	1	9	5	19	0	0	0	0	0	0	SA	35	P	SC	6	0	0	0	0
660	1336994	Dianaprinicy	24	2	1	1	8	4	18	0	0	0	0	0	0	SA	25	P	SC	5	0	0	0	0
661	1336003	Ajitha	28	2	1	1	9	4	24	0	0	0	0	0	0	SA	35	P	SC	4	0	0	0	0
662	1336008	Sugumari	25	2	1	1	8	5	23	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
663	1336093	Sarjana	23	2	1	1	8	4	25	0	0	0	5	0	0	SA	30	P	SC	6	0	0	0	0
664	1336580	Kamalam	21	2	1	1	9	4	26	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
665	1336804	Vedhika	22	2	1	2	8	5	22	0	0	0	0	0	0	SA	35	P	SC	4	0	0	0	0
666	1336443	Kalyani	22	2	1	1	10	5	19	0	0	1	0	0	0	SA	35	P	SC	10	SWI	NG	DD/A	0
667	1336440	Abinaya	26	2	2	1	8	4	20	0	1	0	0	0	0	SA	35	P	SC	5	0	0	0	0
668	1336441	Sindhamani	27	2	2	1	8	4	23	1	0	0	0	0	0	SA	35	P	SC	6	0	0	0	0
669	1336449	Jacqualin	25	2	2	1	8	4	24	0	0	0	0	0	0	SA	30	P	SC	5	0	0	0	0
670	1336471	Lokeshwari	28	2	2	2	8	4	26	0	0	0	0	0	0	SA	25	P	SC	4	0	0	0	0
671	1336491	Kundhavai	24	2	1	1	8	4	24	0	0	0	0	0	0	SA	40	P	SC	3	0	0	0	0
672	1336489	Prameela	23	2	1	1	8	4	20	0	0	0	0	0	0	SA	35	P	SC	3	0	0	0	0
673	1336344	Sadhanna	25	2	1	1	8	5	21	0	1	0	0	0	0	SA	35	P	SC	5	0	0	0	0

674	1336343	Manisha	26	2	2	1	8	4	22	0	0	0	0	0	0	SA	35	P	SC	3	0	0	0	0
675	1336313	Parvathy	27	2	2	1	8	4	25	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
676	1336315	Pushpa	23	2	1	1	8	4	23	0	0	0	0	0	0	SA	35	P	SC	3	0	0	0	0
677	1336353	MohanaGeetha	24	2	1	1	8	4	27	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
678	1336396	GnanaDepa	22	2	1	1	8	4	28	0	0	0	0	0	0	SA	35	P	SC	3	0	0	0	0
679	1336390	Josvin	26	2	2	1	8	5	21	0	0	0	0	0	0	SA	35	P	SC	3	0	0	0	0
680	1336379	Madubala	23	2	1	1	8	4	21	0	1	0	0	0	0	SA	35	P	SC	4	0	0	0	0
681	1336410	Ramya Sivan	21	2	1	1	8	4	19	0	0	1	0	0	0	SA	30	P	SC	3	0	0	0	0
682	1336445	Vasundra	26	2	2	1	10	5	26	1	0	0	0	0	0	SA	35	P	SC	10	SWI	KLEBSIELLA	DD/A	0
683	1336081	Allirani	27	2	2	1	8	4	20	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
684	1336116	Leelavathi	25	2	1	1	9	5	19	0	0	0	0	0	0	SA	30	MV	SC	5	0	0	0	0
685	1336094	Raechel	26	2	1	1	8	5	23	0	1	0	0	0	0	SA	35	P	SC	3	0	0	0	0
686	1336140	Yamuna	24	2	2	1	8	5	26	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
687	1336011	Kumudha	23	2	1	1	8	4	25	0	0	0	0	0	0	SA	40	P	SC	5	0	0	0	0
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689	1336288	Vandhana	25	2	2	1	8	4	23	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
690	1336230	Liily George	26	2	2	1	8	5	24	0	0	0	0	0	0	SA	25	P	SC	3	0	0	0	0
691	1336240	Sheeba	27	2	2	1	8	4	25	0	0	0	0	0	0	SA	30	P	SC	5	0	0	0	0
692	1336203	Vilvapriya	28	2	2	1	8	5	21	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0
693	1336297	Tulasi	29	2	2	1	9	4	22	0	0	0	0	0	0	SA	35	P	SC	7	0	0	0	0
694	1336398	Kameshwari	24	2	2	2	7	5	25	0	0	0	0	0	0	SA	30	P	SC	3	0	0	0	0
695	1336056	Chandralekha	25	2	1	1	8	5	24	0	0	0	0	0	0	SA	35	P	SC	7	0	0	0	0

696	1336084	Tejashwini	26	2	2	1	9	5	24	0	0	0	0	0	0	SA	40	P	SC	7	0	0	0	0
697	1336156	Kuruvammal	27	2	1	1	7	5	23	0	0	0	0	0	0	SA	45	P	SC	4	0	0	0	0
698	1336116	Yazhini	23	2	1	1	8	5	22	0	0	0	0	0	0	SA	35	P	SC	7	0	0	0	0
699	1331257	Devayani	25	2	2	1	9	5	26	1	0	0	0	0	0	SA	30	P	SC	4	0	0	0	0
700	1336275	Chitrasena	24	2	1	2	8	5	24	0	0	0	0	0	0	SA	35	P	SC	5	0	0	0	0

KEY TO MASTER CHART

LSCS	:	Lower Segment Caesarean Section
BMI	:	Body Mass Index
DM	:	Diabetes Mellitus
PROM	:	Premature Rupture Of Membranes
SWI	:	Superficial Wound Infection
SWB	:	Superficial Wound Breakdown
HE	:	Hematoma
RE	:	Resuturing
STAPH	:	Staphylococcus Aureus MRSA: Methicillin
PE	:	Pseudomonas Spp
E Coli	:	Esherichia coli
NG	:	No Growth
DD/A	:	Daily Dressings and Antibiotics Pfannestiel
MV	:	Midline Vertical
SC	:	SubcuticularMattress
1	:	Present
0	:	Absent
SA	:	Spinal anaesthesia

GA : General anaesthesia

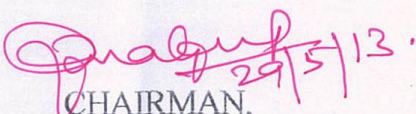
INSTITUTIONAL ETHICAL COMMITTEE
GOVT.KILPAUK MEDICAL COLLEGE,
CHENNAI-10
Ref.No.2318/ME-1/Ethics/2012 Dt:04.04.2013
CERTIFICATE OF APPROVAL

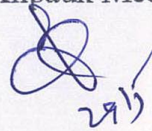
The Institutional Ethical Committee of Govt. Kilpauk Medical College, Chennai reviewed and discussed the application for approval "A Study on to estimate the incidence etiology and risk factors of bacterial wound infections in women who undergoes CS at Kilpauk Medical College Hospital – A case control study" – For Dissertation Purpose submitted by Dr.S.Jayalakshmi Ravi, MS (O&G), PG Student, KMC, Chennai-10.

The Proposal is APPROVED.

The Institutional Ethical Committee expects to be informed about the progress of the study any Adverse Drug Reaction Occurring in the Course of the study any change in the protocol and patient information /informed consent and asks to be provided a copy of the final report.




CHAIRMAN,
Ethical Committee
Govt.Kilpauk Medical College,Chennai


29/5

சுய ஒப்புதல் படிவம்

ஆய்வு செய்யப்படும் தலைப்பு : “TO ESTIMATE THE INCIDENCE
ETIOLOGY AND RISK FACTORS OF WOUND INFECTIONS IN WOMEN
WHO UNDERGOES CESAREAN SECTION AT KILPAUK MEDICAL COLLEGE
HOSPITAL-A PROSPECTIVE STUDY”

Department of Obstetrics and Gynaecology, KMCH

பங்கு பெறுபவரின் பெயர் :

பங்கு பெறுபவரின் வயது :

பங்கு பெறுபவரின் எண் :

மேலே குறிப்பிட்டுள்ள மருத்துவ ஆய்வின் விவரங்கள் எனக்கு விளக்கப்பட்டது. நான் இவ்வாய்வில் தன்னிச்சையாக பங்கேற்கிறேன். எந்த காரணத்தினாலோ எந்த சட்ட சிக்கலுக்கும் உட்படாமல் நான் இவ்வாய்வில் இருந்து விலகிக் கொள்ளல்லாம் என்றும் அறிந்து கொண்டேன்.

இந்த ஆய்வு சம்பந்தமாகவோ, இதை சார்ந்து மேலும் ஆய்வு மேற்கொள்ளும் போதும் இந்த ஆய்வில் பங்குபெறும் மருத்துவர் என்னுடைய மருத்துவ அறிக்கைகளை பார்ப்பதற்கு என் அனுமதி தேவையில்லை என அறிந்து கொள்கிறேன். இந்த ஆய்வின் மூலம் கிடைக்கும் தகவலையோ, முடிவையோ பயன்படுத்திக் கொள்ள மறுக்கமாட்டேன்.

இந்த ஆய்வில் பங்கு கொள்ள ஒப்புக் கொள்கிறேன். இந்த ஆய்வை மேற்கொள்ளும் மருத்துவ அணிக்கு உண்மையுடன் இருப்பேன் என்றும் உறுதியளிக்கிறேன்.

பங்கேற்பவரின் கை சாட்சியாளரின்

கையொப்பம்

இடம் :

இடம் :

தேதி :

தேதி :

பங்கேற்பவரி ஆய்வாளரி

ஆய்வாளரின் கையொப்பம்