

## **ABSTRACT**

### **Background**

Expenditure for health in India is borne predominantly out-of-pocket costs. A hospital admission often drives households to poverty. Diabetes in particular has become a huge economic burden in both rural and urban India. Pyelonephritis is a frequent cause of admission in a patient with Diabetes. With the rise in the incidence of community acquired extended spectrum beta-lactamase producing organisms leading to increased complications, inappropriate anti-microbial therapy, longer duration of antibiotics and hospital stay, the cost of illness has increased.

### **Aim**

To estimate the cost of Acute Pyelonephritis in patients with Type 2 Diabetes mellitus admitted in general medical wards

### **Objectives**

1. To estimate the total cost of a single admission for Acute Pyelonephritis
2. To estimate the difference in cost of admission for Acute Pyelonephritis between Diabetics and Non-Diabetics
3. To find the difference of cost of admission for Acute Pyelonephritis caused by ESBL organisms and non-ESBL organisms

## **Methods**

We did a prospective observational economic study of patients 18 years and above admitted with clinical features suggestive of acute pyelonephritis, laboratory evidence of pyuria and a blood culture and/or urine culture growing an uropathogenic organism. Participants were recruited from the general medical wards in Christian medical college, vellore which is a tertiary care hospital primarily catering to middle and low income group patients from all over India, predominantly the south Indian and the north eastern states. We assessed the direct medical, direct non-medical and indirect cost for an admission for pyelonephritis. We also assessed the quality of life using the WHOQOL BREF questionnaire.

## **Findings**

Between March 2016 and July 2017, we screened and included 92 participants for the study. The number of Diabetics were 61 (66.3%) and the number of pyelonephritis caused by an extended spectrum beta lactamase producing organism was 49 (53.3%). The mean overall cost of a single admission for pyelonephritis was Rs.88,330.2. The mean overall cost of an admission for a patient with Diabetes mellitus with Pyelonephritis was Rs.96,193.0. The mean overall cost of patient admitted with Pyelonephritis caused by extended spectrum beta-lactamase producing organism was Rs.1,03,154.9 which was significantly more than that caused by a non-extended spectrum beta lactamase producing organism. The intangible costs as measured by the quality of life showed that the psychological and the social domains were particularly lower. The quality of life was lower in patients with Diabetes and patients who had pyelonephritis due to an extended spectrum beta lactamase producing organism.

## **Conclusion**

A single admission for a patient with pyelonephritis is a catastrophic health expenditure in the household in India. In this setting, policies should be geared towards preventing the vulnerable middle and low economic groups from being driven below the poverty line.