

## **ABSTRACT**

### **Background:**

Periodontitis is a multifactorial infectious disease characterized by gingival inflammation and attachment loss in susceptible host. Several biochemical events that occur during inflammation leads to release of various enzymes by plaque bacteria and host tissue cells .Of such various enzymes, the host lysosomal cysteine proteases like cathepsin B,H,L are currently thought to be major contributors of periodontal tissue destructions .

Cystatin C is a part of super family of cysteine protease inhibitors. It is a nonglycosylated , basic, low molecular weight protein widely distributed in biological fluids. It regulates the inflammatory periodontal disease by inhibiting the collagen degrading cathepsin and play a pivotal role in tissue remodelling by down regulating proteases activity. Thus it may serve as a useful biochemical marker for assessing periodontal disease status .Many studies have been carried out till date that talk about the severity of chronic periodontitis and aggressive periodontitis but none correlates with Cystatin C level in blood.

**Aim :**To determine and compare the levels of serum Cystatin C before and after phase 1 therapy in patients with chronic periodontitis and aggressive periodontitis.

**Methods:** A total of 30 subjects were selected, 10 each of generalised chronic periodontitis, generalised aggressive periodontitis and healthy (control group).Blood sample was collected and serum Cystatin C value was detected from all subjects at baseline and 3 months after phase 1 therapy. Clinical parameters such as plaque index , gingival bleeding index, probing pocket depth, clinical attachment level were recorded at baseline and at 3 months after phase 1 therapy .

**Results:** There was significant correlation between the baseline value of clinical parameters and serum Cystatin C level in healthy ,chronic and aggressive periodontitis patient. Statistically significant reduction was observed in the serum Cystatin C level in both chronic periodontitis and aggressive periodontitis patients 3 months after phase I therapy as compared to baseline level.

### **Conclusion :**

Within the limitations of the present study, it can be concluded that serum Cystatin C concentration was found to be elevated from periodontally healthy group to chronic periodontitis group and aggressive periodontitis and decrease in after periodontal therapy group. This suggests that Cystatin C acts as anti-inflammatory marker in serum.

**Keywords:** Periodontitis, Serum Cystatin C, Phase 1 therapy

