SUMMARY AND CONCLUSION

Rheumatoid arthritis (RA) is a common severe inflammatory disorder, affecting women and men of all ages, with a peak incidence in young adults and post menopausal women. It is a disease of multifactorial origin including a genetic predisposition and characterized by immune driven chronic inflammation ***(Lipsky, 2005).***

Cathepsin K is a papain-like cysteine protease that constitutes the main proteolytic activity in bone-resorbing osteoclasts. Besides its expression in osteoclasts and related chondroclasts and multinucleated giant cells, cathepsin K has also been described in mononuclear cells that may act as precursor cells for osteoclasts, in macrophages, and various epithelial cells ***(Tepel, et al., 2000).***

The present study was conducted on 65 individuals categorized as following:

- 15 apparently healthy adults as a control group.
- 50 patients with RA.

All the studied individuals were subjected to full history taking and clinical examination.

In the present study we investigated the serum cathepsin k levels in the different study groups and also its relation to disease activity in RA.

We investigated the relation between cathepsin k and different variable parameters, sex, disease duration, morning stiffness, erythrocyte sedimentation rate, C-reactive protein and heamoglobin concentration.

The results of the present study revealed that the concentrations of serum cathepsin k were significantly higher in all groups of patients than in healthy control group.

CRP concentration were determined in the same samples. It was significantly higher in all groups of patients than in healthy controls. Serum cathepsin k levels also correlated significantly with those of CRP in RA group.

Disease activity of RA was assessed using Mallya and Mace score (duration of morning stiffness in minutes, severity of pain by visual analogue scale, joint tenderness, grip strength, ESR and Hb concentration level).

The present study revealed a statistically significant positive correlation between serum cathepsin k and both morning stiffness and ESR.

A statistically significant negative correlation was found between cathepsin k and Hb concentration (g/dl). From the results the serum level cathepsin k significantly correlated with disease activity of RA.

In conclusion, the results of the present study in keeping with evidence from literature suggest that the elevation of serum level of cathepsin k appears to be a common feature in RA. Cathepsin k levels also showed remarkable relation with the parameters describing the inflammatory process in RA patients (ESR, CRP and disease grades of activity and severity).

However, further studies to better define this role deserve to be conducted.