

# Evaluation of serum cathepsin B, D and L levels in women with late-onset preeclampsia

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## Objective

Cathepsin proteases, including cathepsin B, cathepsin L and cathepsin D have been suggested to be involved in a variety of cellular processes such as apoptosis, angiogenesis, cell proliferation and invasion. Although there are studies indicating the roles of cathepsins in normal and abnormal placentation, research on the serum levels of cathepsins in preeclampsia is limited. The aim of the study is to assess serum cathepsin B, D and L levels in women with late-onset preeclampsia.

#### Methods

One hundred forty pregnant women were enrolled in the study, of which 100 subjects were preeclamptic (late-onset preeclampsia diagnosed at  $\geq$  34 weeks gestation) and 40 were healthy controls. Serum levels of cathepsin B, D and L were measured with enzyme-linked immunosorbent assay (ELISA) and compared between preeclamptic and control groups. Student's t-test or Mann-Whitney U-test was used for comparisons of the mean between the two groups, as appropriate. Correlation analyses were performed by using Pearson's and Spearman's correlation methods.

## Results

Cathepsin B levels were significantly higher in the preeclamptic group compared with the control group (4, 24  $\pm$ 3, 51 ng/ml vs 2, 04  $\pm$ 1, 97ng/ml, respectively; p<0. 001). Cathepsin D levels were significantly higher in the preeclamptic group compared with the control group (4, 97  $\pm$ 1, 24 ng/ml vs 4, 20 $\pm$ 1, 65ng/ml, respectively; p<0. 01). There was no statistically significant difference between the groups in terms of cathepsin L levels. There was no statistically significant difference between the groups in terms of age, body mass index and gestational age. Mean blood pressure, 24 hour urine protein and serum uric acid levels were significantly higher in the preeclamptic group. Cathepsin B levels were found to be positively correlated with uric acid levels (r=0. 343, p<0. 01) in women with preeclampsia.

## Conclusion

Women with late-onset preeclampsia have significantly higher serum cathepsin B and D levels than the controls. Cathepsin B levels were found to be positively correlated with uric acid levels in women with preeclampsia. Cathepsin B and D may be promising biomarkers in women with late-onset preeclampsia.