



Dr Solberg Anna

**Department of Surgery East Hospital/ Sahlgrenska University Hospital 416 85Gothenburg Sweden
#46 31 3434100 anna.solberg@surgery.gu.se**

Topic : Peritoneal Immunity and Surgery

Authors and addresses : Anna Solberg^{1,2}, M.D., Lena Holmdahl² M.D. Ph.D, Peter Falk², B.Sc., Ingrid Palmgren², B.Sc., Marie-Louise Ivarsson^{2,3}, M.D. Ph.D.,
1Department of Surgery, Sahlgrenska University Hospital/Östra, Gothenburg, Sweden, 2 Institute of clinical sciences, The Sahlgrenska Academy, Gothenburg University, Gothenburg, Sweden
3Department of Surgery, Kungsbacka Hospital, Kungsbacka, Sweden

Presenting Authors : Anna Solberg

The Serine proteases uPA and PAI-1 act in concert with matrixmetalloproteinases and may conduct appendix perforation .

The Serine proteases are key factors in the proteolytic cascade and act together with the matrixmetalloproteinases (MMPs) in extracellular matrix (ECM) degradation. It is reasonable to assume that they may be involved in the genesis of tissue injury in appendicitis eventually leading to appendix perforation. The alteration of the balance between MMPs and their inhibitor tissueinhibitor of metalloproteinase (TIMP) during the course of the inflammatory process in acute appendicitis, was demonstrated in a recent study. In the present study special interest was focused on the expression and localization of serine urokinase type-plasminogen

The uPA and PAI-1 expressions were estimated in tissue specimens from patients with appendicitis (n=30), including phlegmonous, gangrenous and perforated appendicitis, and from control specimen (n=9) by means of the quantitative ELISA technique. The localization of the enzymes was performed by means of immunohistochemistry. The results in appendicitis were compared with controls and the results in the subgroups of appendicitis were mutually compared with each other and controls.

The over all expressions of UPA and PAI-1 were significantly higher in appendicitis than in controlspecimen ($p<0.001$) ($p<0.0001$). Expressions in phlegmonous (n=15), gangrenous (n=6) and perforated appendicitis (n=9) were each higher when compared with the controls ($p<0.01$) ($p<0.01$) (n=9). Moreover, when mutually compared PAI-1 was significantly higher in perforated appendicitis than in phlegmonous appendicitis ($p<0.01$).

uPA was observed in a patchy pattern in all groups of appendicitis and controls. PAI-1 occurred most intense in gangrenous and perforated appendicitis. The serosa stained intensely in specimen from perforated appendicitis.

The high expression of uPA and especially PAI-1 may be complementary to the MMPs in the genesis to a perforation in appendicitis. If uPA and PAI-1 are systemically reflected they could together with the MMPs predict perforation in patients with appendicitis, an advantage for future diagnose, treatment and outcome.