



The Norwegian Society for Immunology hereby announces the January Guest Lecture:

Inflammatory bowel disease-associated interleukin-33 is preferentially expressed in ulceration-associated myofibroblasts - a role for IL-33 in wound healing ?

Jon Sponheim

*Department of Internal Medicine, Asker and Bærum Hospital,
Vestre Viken Hospital Trust, Rud and
Institute of Pathology, Oslo University Hospital*



Date: Thursday, 27th of January 2011

Venue: Seminar room 2 B2.U002, Rikshospitalet

Time: 15.00-16.00

Program

15.00-15.15: Refreshments

15.15-16.00: Guest Lecture and discussion

Interleukin-33 is a novel member of the interleukin-1 family that induces mucosal pathology in vivo and may drive fibrosis development and angiogenesis. To address its potential role in inflammatory bowel disease (IBD), we explored its tissue expression in biopsy specimens from untreated ulcerative colitis (UC) patients, observing a 2.6 fold upregulation of IL-33 mRNA compared to controls. Immunohistochemical analyses of surgical specimens showed that a prominent source of IL-33 in UC lesions were ulceration-associated myofibroblasts which coexpressed the fibroblast marker HSP47, platelet-derived growth factor receptor (PDGFR) β , and in part, the myofibroblast marker α SMA (smooth muscle actin). By contrast, IL-33 positive myofibroblasts were almost absent near the deep fissures seen in Crohn's disease (CD). A screen of known and putative activators of IL-33 in cultured fibroblasts revealed that the TLR3 agonist poly (I:C) was among the strongest inducers and that it synergized with TGF β , a combination also known to boost myofibroblast differentiation. Experimental wound healing in rat skin revealed that the de novo induction of IL-33 in pericytes and the possible activation of scattered, tissue-resident IL-33+PDGFR β + α SMA-fibroblast like cells were early events preceding the later appearance of IL-33+PDGFR β + α SMA+ cells. In conclusion, our data point to a novel role for IL-33 in mucosal healing and wound repair and to an interesting difference between ulcerative colitis and Crohn's disease.