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Heparanase and inflammatory mediators in Rheumatoid Arthritis (RA)

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Rheumatoid arthritis (RA) is a chronic inflammatory disease characterized by synovial inflammation in multiple joints with hyperplasia of the synovial intimal lining layer, influx of inflammatory cells and angiogenesis, eventually resulting in the destruction of cartilage and bone. The early process of angiogenesis is recognized as a fundamental process in pannus formation. Given that angiogenesis is one of the earliest manifestations in RA, the ability to determine a marker for angiogenesis and demonstrate its specificity in RA would aid in disease diagnosis. Despite the diagnostic contribution of currently used RA markers and rheumatoid factors, about one-third of RA patients remain seronegative. Heparanase (HPSE) activity is implicated in promotion of angiogenesis in the synovium and RA progression. The action of heparanase is involved in multiple regulatory events related, among other effects, to augmented bioavailability of growth factors and cytokines at sites of inflammation, allowing extravasation of immune cells into nonvascular spaces and releasing inflammatory mediators that regulate angiogenesis. We reported a highly significant increase of HPSE activity and expression in synovial fluid and synovial tissue of RA patients, and the increase of the heparanase activity positively correlates with angiogenic gene expression. We have further obtained preliminary evidence from which we postulate that the involvement of HPSE in gene regulation in the development of pannus in RA may be reflected in the patients' blood, which makes heparanase a potential predictor of RA progression and a novel therapeutic target in RA.

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Good functional outcome but not regained health related quality of life in the majority of 20-69 years old patients with femoral neck fracture treated with internal fixation: A prospective 2-year follow-up study of 182 patients

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Background & Purpose: Prospective studies on patient related outcome in patient <70 with a femoral neck fracture (FNF) are few. We aimed to investigate functional outcome and health-related quality of life (HRQoL) in 20-69 years old patients with a FNF treated with internal fixation.

Patients & Methods: 182 patients, 20-69 years with a FNF treated with internal fixation were prospectively included in a multicenter study. Follow up included radiographic and clinical examination at 4, 12 and 24 months. Collected data were on hip function using Harris hip score (HHS), HRQoL (EQ-5D and SF-36), fracture healing and re-operations.

Results: At 24 months, HHS was good or excellent in 73% of the patients with displaced fractures and 85% of the patients with non-displaced fracture (p=0.15). Of the patients with displaced fracture (n=120), 23% had a non-union (NU) and 15% had an avascular necrosis (AVN) with a 28% re-operation rate. None of the patients with non-displaced fracture (n=50) had an NU, 12% had a radiographic AVN and 8% needed a re-operation. The mean EQ-5Dindex in patients with displaced fracture decreased from 0.81 to 0.59 at 4 months, 0.63 at 12 months and 0.65 at 24 months (p<0.001). The corresponding values for patients with non-displaced fracture were 0.88, 0.69, 0.75 and 0.74 respectively (p<0.001). The mean SF-36 total score in patients with displaced fracture decreased from 76 to 55 at 4 months, 63 at 12 months and 0.65 at 24 months (p<0.001). The corresponding values for patients with non-displaced fracture were 80, 67, 74 and 0.76 respectively (p<0.001).

Interpretation: Three-quarters of the patients with displaced femoral neck fracture were healed after one operation and reported good or excellent functional outcome at 24 months. However, they did not regain their pre-fracture level of HRQoL.

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