

4th International Conference on

Orthopedics & Rheumatology

October 26-28, 2015 Baltimore, Maryland, USA

Heparanase may have a key role in the regulation of inflammatory mediators in rheumatoid arthritis

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Heparanase is the only known mammalian endoglycosidase capable of degrading the heparan sulfate (HS) glycosaminoglycan, both in extracellular space and within the cell. HS is reported to control inflammatory responses at multiple levels, including the sequestration of cytokines/chemokines in the extracellular space, the modulation of the leukocyte interaction with the endothelium and ECM and the initiation of innate immune responses. We have reported heparanase expression in synovium of rheumatoid arthritis (RA) patients and this new finding may offer a new insight of the potential regulatory role of heparanase in the disease activity of RA. However, the precise mode of action by heparanase in inflammatory reactions of RA remains largely unknown. The aim of this project was to examine the heparanase activity, its expression and correlation with the inflammatory mediatory and angiogenic gene expression in plasma and synovium of RA patients, with an ultimate goal of developing heparanase as a potential predictor of RA progression and a new therapeutic target. We have found that a highly significant increase of heparanase activity and expression in synovial fluid and synovial tissue of RA patients, and an increase of the heparanase activity positively correlate with the inflammatory and angiogenic gene expression. We also have some evidence to support a postulation that the involvement of heparanase in gene regulation in the development of pannus in RA may be reflected in a patient's blood, thus heparanase can be a potential predictor of RA progression and a novel therapeutic target.

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A series of nerve repairs on traumatic nerve injuries

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Nerve injuries are a difficult surgical problem to tackle with. They have been accepted as an entity with poor prognosis. We share our experience of surgical repair of nerve injuries in three different hospitals of South Asia and Western Europe. The objectives of this retrospective study was to audit the results of nerve repairs done within a period of 10 years in three different centres of the world and assess the outcome. A retrospective analysis of the nerve repairs of the upper limb as well as of the lower limb of 456 patients were undertaken in this study. The study period was 10 years from January 2003 to October 2013 and involved nerve repairs done in three institutions. Case notes of nerve repairs identified from theatre registers were used to gain information of the relevant patients. Pre-operative assessment notes and operative notes were used to identify the nerves involved, the mechanism of injury and operative interventions undertaken. Follow-up details were obtained also from the records in the case notes of the patients. A total of 456 patients were looked at in three different hospitals in Colombo, Manchester and Ayr. Out of the 456 patients 382 were males and nearly 68% were due to violence. About 12% were due to domestic accidents and 20% were occupational injuries. Out of the nerve injuries 76% were involving the upper limb and a total of 79% were associated with fractures. Three hundred and twenty one patients had primary nerve repairs. Out of the patients who had primary nerve repairs nearly 62% achieved a good functional outcome. Of the group of patients who had delayed nerve repairs due to various reasons only 23% achieved a good functional outcome. Common causes for nerve injuries are related to violence and occupational hazards. They are more common in the upper limb. Nerve injuries are best dealt with in the primary wound exploration where ever possible for best functional outcome. Delayed exploration and repair is not entirely without a good functional result.

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