



Biomarker Discovery in Wounds: Proteomic Windows on Wounds and Wound Healing

Date: Friday, 11 Sept 2009
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Venue: LT 20
Host: Prof RM Kini

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Background: Non-healing or chronic wounds represent a major issue in the medical arena contributing to increased morbidity in certain patient groups and is accompanied by additional medical care and costs for those patients. Normal wound healing is associated with the following processes: inflammation, proliferation and remodeling. Given this, wound healing is a multifaceted, complex process requiring careful molecular orchestration for success healing to occur. Impaired wound healing has been associated with numerous factors including growth factors, edema, ischemia, hypoxia, infection, arterial and venous insufficiency, neuropathy, inadequate perfusion, metabolic disease. Aging, diabetes, immune deficiencies, nutrition and skin cancers have also been associated with impaired, or non-healing wounds. The most common chronic wounds are diabetic foot ulcers, pressure ulcers, and venous stasis ulcers.

Objective: To give the audience a basic understanding of wounds and wound healing and to describe experiments performed using comparative proteomic analyses of wound exudates from mice treated with snake venom and snake toxins to understand the mechanisms by which local wounds develop. Similarly describe our comparative proteomic analyses of wound exudates from human healing, non-healing/chronic, and suction wounds for the discovery of potential biomarkers for healing and non-healing wound for use in early detection/diagnosis/prognosis.

Significance: Successful identification of lead biomarkers in wound exudates will enable further studies for validation/verification and potential commercialization. Insights into the molecular mechanisms associated with wound healing may lead to additional investigations directed at gaining greater understanding of normal and impaired wound healing processes as well as potentially providing insight into new therapeutic approaches for the treatment of chronic wounds.

