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Prolactin and its role in wound healing

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Wound healing is an extremely complex process involving different cell-types and also growth factors, cytokines and components of the extracellular matrix. Each phase of wound healing is characterized by closely integrated events thanks to mechanisms that involve chemotaxis of specific cell-types and release of molecules that act as paracrine effectors; even though today it can also refer to endocrine effectors, in fact the existence of numerous and complex interactions between endocrine and immune system is now well known. One of these interactions is that with a peptide hormone secreted by the anterior hypophysis: prolactin (PRL). PRL is a potent immunomodulator capable of undertaking a specific role in regulating the immune response both humoral and cell-mediated one. In recent years, a lot of evidences indicate that several other tissues are able to produce PRL. It is believed that PRL expression in skin can probably be related to an inflammatory response and may play a role in the wound healing process. From these considerations, our second experience, here described, which aims to assess PRL topic treatment effects on wound healing of skin lesions in rats, began. In our study, PRL treatment have been made by dripping on lesions produced on the back of each animal, using the following protocol: control group (100 μl of PBS); experimental group (100 μl of PRL 2 ng/ml in PBS). Total results of our studies, including this one that shows a greater rate of wound healing in PRL-treated animals, support the idea of a crucial role of PRL on wound healing in relation to its effects both on angiogenesis and proliferation of keratinocytes in the re-epithelialization process, taking to restored skin.

Keywords: prolactin, cutaneous injury