A pressure ulcer is a localized injury to the skin and/or underlying tissue resulting from pressure over a bony prominence. Formation of granulation tissue is required for wound healing process of deep pressure ulcer. During this process, granulation tissue is affected by factors including topical agents and external forces, wound tissue exhibits variable clinical appearance. Because wound tissue is not covered with epidermis, wound can be considered to be a visible extracellular matrix (ECM).

Hyaluronan plays important roles in inflammation and regeneration through interaction with various molecules such as Serum-derived Hyaluronan-Associated Proteins (SHAP) and versican. Therefore, we have examined relation between clinical appearance of wound and HA-associate ECM.

Wound exudates from pressure ulcers were sampled with swab and extracted with a buffer containing 6 M guanidine-HCl. Extract was semi-quantified by dot blot analyses using appropriate probes. This study was approved by the ethical committee of Aichi Prefectural University and National Center for Geriatrics and Gerontology.

Samples from wounds damaged by friction contained increased amount of SHAP, versican and fibronectin compared with those from edematous wounds.

That suggests mechanical stress such as friction induces tissue inflammation through the interaction with HA-associate molecules. Further, in wounds damaged by friction, versican-SHAP-HA complex may be formed by different manner from edematous wound. Distinct complex formation of SHAP-HA could be a characteristic marker to evaluate inflammatory response of wound tissue.

Key words: pressure ulcer, granulation tissue, SHAP