

16th Conference of the EWMA (European Wound Management Association)  
Prague · Czech Republic · 18-20 May 2006

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### **A Prospective Study of Reactive Hyperemia Among Tertiary Hospital Patients**

**Aim:** The first clinical sign of pressure ulcer (PU) development is reactive hyperemia over a bony prominent area. However, there is no clinical evidence of the accuracy of reactive hyperemia (RH) for predicting PU development or factors aggravating RH. This study aimed to determine the predictive accuracy and factors aggravating RH.

**Methods:** A prospective cohort study was conducted in a 832-bed university hospital. Four-hundred-sixty-seven inpatients consented to participate in this study. Skin condition, risk factors, care plans and practices were measured everyday for 4 weeks by direct assessments and chart review by research staff. To identify aggravating factors, we investigated the conditions of RH patients' using inductive methods.

**Results:** RH developed in 62 (13.2%) and a PU in 8 (1.7%) patients. Six of the 62 RH patients worsened to PU of either Stage I or II. Calculating the accuracy of RH for predicting PU development, sensitivity was 75%, specificity 77%, and positive likelihood ratio (LR) 3.26. The factor found to aggravate RH was inadequate support surface management to a patient whose condition was deteriorating.

**Discussion:** The value of LR means small effect to the clinical use. However, if adequate support surface management were implemented to RH patients, the incidence of PU would probably fall to 0.7%. A limitation of this study was that most of patients had urinary catheters. Further study is needed on incontinent subjects who have moisture problems that contribute to PU development by macerating the skin.