



Service Priorities and Programmes
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Risk factors of pressure ulcer occurrence in older patients after admission to an acute hospital

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Introduction

The proposed mechanism for pressure ulcer development is that a mechanical loading large enough to cause occlusion of capillary blood flow lead to ischaemia which results in cell death. However, the pathogenesis of pressure ulcer is not fully elucidated. For instance, in healthy individuals, no pressure ulcer will form even after their soft tissues are subjected to various degrees of mechanical loading during activities of daily living. We propose that it is the lack of autoregulation in tissue perfusion that leads to hypoperfusion and thus cell death. Regardless of the causes of the autoregulation impairment, the primary and most upstream cause of hypoperfusion is low blood pressure. Therefore, we hypothesized that low systolic blood pressure in the vulnerable older patients could lead to hypoperfusion, and would associate with pressure ulcer occurrence during hospitalization.

Objectives

To examine whether hypotensive episode (systolic blood pressure less than or equal to 90mmHg) is associated with pressure ulcer occurrence

Methodology

All patients admitted to the convalescence ward of the Department of Medicine and Geriatrics of Pok Oi Hospital during the study period from May 2011 to July 2011 were enrolled into the study. All these patients were first admitted to the acute wards through the Accident and Emergency Department and subsequently transferred to the convalescence ward. Patients were eligible for the study if they were aged 65 years or older and stayed in the convalescence ward for at least 5 days. The medical records for all the eligible patients were retrieved. Demographics including age, sex and whether they were from home or residential placement were recorded. Baseline characteristics including basic physiological parameters (including blood pressure on admission to acute ward), comorbidities, functional status and nutritional status were also rated. Hypotension was defined as a systolic blood pressure less than or equal to 90mmHg. The record of systolic blood pressure over the entire hospital stay for each enrolled patient was reviewed. Any episode of hypotension was recorded.

Result

There were a total of 259 patients admitted to the convalescence ward via the acute wards. Twenty seven patients were excluded because they were younger than 65 years of age. Three others were excluded because they had a hospital stay of less than 5 days. The remaining 229 patients were enrolled in this study. Hypotension was independently associated with incident pressure ulcer occurrence (Odds Ratio 6.71, $p=0.001$). Norton score was not predictive of pressure ulcer occurrence in hospital setting.