**Unexpected Findings from a Prospective Observational Study Among Older Adults in Long Term Care**

Background

Pressure ulcer (PU) research has pointed immobility as being the primary condition that exposes individuals to pressure and shear, and preventive measures are targeting it (1). Despite this, PU incidence is still increasing especially within older persons (2). This study aimed to identify how activity and mobility lead to PU development using two objective assessments for mobility and PU early detection.

Methods

With granted ethical approval, 150 older persons from long-term settings were followed-up for 20 days, skin assessed daily using visual skin assessment (VSA) and sub-epidermal moisture (SEM) assessment(3, 4) (3 consecutive days of high SEM were considered a SEM-PU). Activity and mobility were measured using Braden subscales and also a “movement score” (MS) (mean number of movements/hour) was quantified using a piezoelectric motion sensor (5). Further, MSs from 22 healthy participants were measured to classify the movement levels of older participants into: low movers and high movers/agitated.

Results

The PU incidence using VSA was 12.7% (low movers= 6.7%; high movers/agitated= 6%). Using SEM, the incidence was 78.7% (low movers= 40.0%; high movers/agitated= 38.7%). On VSA, 100% of PU were confirmed using SEM assessment which detected a PU on average 8.2 days before it appeared visually on skin surface (min: 1; max: 18; SD: 6.3). PU detection was 25 times greater using SEM than VSA (OR 25.42; 95% CI: 13.68-47.25).

Conclusion

Evidence of improved assessment using a motion sensor to assess mobility was confirmed as 19% of immobile and 44% of very limited individuals (Braden subscale) were actually highly mobile individuals. Interestingly, most of those movements were unsafe as about 30% of them developed a SEM-PU. Therefore, the most striking finding was that PU occurred both in low and high movers, which was unexpected as a similar finding has not been previously reported in the literature. The traditional focus on low movers may detract from the identification of those making abnormally high frequency of movements. PU assessments can be enhanced through a combination of SEM and VSA, and through identification of both individuals with impaired mobility and abnormally high movements/agitated, especially with low activity levels giving a more clear indication of the individuals’ risk status.

References

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