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Short Communication

A Mini Review on the Risk Assessment Scale Scoring Systems for Pressure (Decubitus) Ulcers: Norton, Braden or Waterlow Scales?

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Pressure ulcer (decubitus, bedsore) is defined as localized injury to the skin or underlying tissue over a bony prominence as a result of pressure with friction and shear. Clinical presentation can vary from simple reactive hyperemia to severe osteomyelitis [1-3]. It is very common in the elderly bedbound patients, and the most commonly affected body portions are sacrum and heel. Prevention of pressure ulcers should be started by primary care givers through education of the patient and the family, and every measure should be undertaken to prevent its development. There are three well-known scaling systems in prediction of pressure ulcers: Norton, Braden and Waterlow.

Norton pressure sore risk assessment scale scoring system has been the first evaluation scale (Table 1). It is still widely used today. The total score is the Norton Rating (NR) for that patient and may vary from 20 (minimum risk) to 5 (maximum risk).

Physical Condition	
Good	4
Fair	3
Poor	2
Very bad	1
Mental Condition	
Alert	4
Apathetic	3
Confused	2
Stuporous	1
Activity	
Ambulant	4
Walks with help	3
Chairbound	2
Bedfast	1
Mobility	
Full	4
Slightly impaired	3
Very limited	2
Immobile	1
Incontinence	
None	4
Occasional	3
Usually urinary	2
Urinary and fecal	1

Table 1: Norton scale.

NR below 9: Very High Risk, 10 to 13: High Risk, 14 to 17: Medium risk, above 18: Low risk.

Another rating system getting more and more popularity is Braden Scale, more recent and precise than the Norton scale, which evaluates factors such as sensory perception, skin wetness and nutrition status (Table 2).

Sensory perception	
No impairment	4
Slightly limited	3
Very limited	2
Completely limited	1
Moisture	
Rarely moist	4
Occasionally moist	3
Very moist	2
Constantly moist	1
Activity	
Walks frequently	4
Walks occasionally	3
Chair fast	2
Bedfast	1
Mobility	
No limitation	4
Slightly limited	3
Very limited 2	
Completely immobile	1
Nutrition	
Excellent	4
Adequate	3
Probably inadequate	2
Very poor	1
Friction and shear	
No apparent problem	3
Potential problem	2
Problem	1

Table 2. Braden scale.

Braden score greater than 18: Low risk, between 18 and 14: Medium risk, between 14 and 10: High risk, lesser than 10: Very High Risk

Lastly,Waterlow scale evaluates multiple factors, and has the risk of over-assessment (Table 3).

Pressure ulcer aspect has been discussed adequately amongst nurses [4,5]. However, the treating surgeons should also be well aware of the various risk factors and the risk assessment scales. All

Sex	
Male	1
Female	2
Age	
14 – 49	1
50 – 64	2
65 – 74	3
75 – 80	4
81+	5
Body Mass Index (BMI, weight (kg)/height (m^2)	
BMI 20-24.9	0
BMI 25-29.9	1
BMI > 30	2
BMI < 20	3
Continence	
Complete/catheterised	0
Incontinent urine	1
Incontinent faeces	2
Doubly incontinent (urine & faeces)	3
Skin Type - Visual Risks Area	
Healthy	0
Tissue paper (thin/fragile)	1
Dry (appears flaky)	1
Oedematous (puffy)	1
Clammy (moist to touch)/pyrexia	1
Discoloured (bruising/mottled)	2
Broken (established ulcer)	3
Mobility	
Fully mobile	0
Restless/fidgety	1
Apathetic (sedated/depressed/reluctant to move)	2
Restricted (restricted by severe pain or disease)	3
Bedbound (unconscious/unable to change position/traction)	4
Chair bound (unable to leave chair without assistance)	5
Nutritional Status	
Unplanned weight loss in past 3-6 months < 5% Score 0, 5-10% Score 1, >10% Score 2	0-2
BMI >20 Score 0, BMI 18.5-20 Score 1, BMI < 18.5 Score 2	0-2
Patient/ client acutely ill or no nutritional intake > 5 days	2
Special Risks -Tissue Malnutrition	
Multiple organ failure/terminal cachexia	8
Single organ failure e.g. cardiac, renal, respiratory	5
Peripheral vascular disease	5
Anaemia, Hb < 8	2
Smoking	1
Special Risks - Neurological Deficit	
Diabetes/ MS/ CVA/ motor/ sensory/ paraplegia (Max 6)	4-6
Special Risks - Surgery/Trauma	
On table > 6 hours	8
Orthopaedic/ below waist/spinal (up to 48 hours post op)	5
On table > 2 hours (up to 48 hours post op)	5
Special Risks – Medication	
Cytotoxic, anti-inflammatory, long term/high dose steroid (Max 4)	4

Table 3. Water low scale.

Water low pressure area risk over 20: Very high, over 15: High risk, over 10: At risk.

predictive factors should be evaluated during preulcer period to assess the risk of development of a decubitus ulcer, and all measures should be undertaken. One of the scales mentioned above (Norton, Braden and Waterlow scales) can be used in clinical settings.

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