

MEDITEC PNEU-AIR

Evaluation of dynamic
mattresses: Evidence 2

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Case Report 1

The patient was an elderly female admitted to a HSE care centre for older people ten days following surgical repair of a fracture neck of femur.

The care facility promotes person centred care and a full nursing assessment of the twelve daily activities of living was carried out. A detailed care plan specific to the patients needs was developed in conjunction with the patient. Key areas identified were potential skin excoriation and damage from urinary and faecal incontinence, reduced mobility and decreased appetite. Evaluation of all interventions was carried out and the patients care plan revised to reflect it.

On admission all patients have a Pressure Ulcer Risk Assessment carried out for using the 2005 Revised Waterlow Risk Assessment Tool.

The patient was assessed and scored 28 placing the patient in the very high category risk for developing pressure ulcers.

The following co existing risk factors were identified for contributing to the patient's risk of developing pressure ulcers

- Skin assessment identified some redness on the buttocks classified as a Stage 1 Pressure Score using the EPUAP grading system
- Patient complained of painful heels
- Recent Orthopaedic Surgery for repair of a fracture neck of femur
- Osteoporosis, which had rendered the patient chair, bound
- Urinary & Faecal Incontinence
- Diminished appetite

Nursing staff identified the need for a pressure-relieving mattress

- Mattresses as support surfaces have two main function: the redistribution of pressure to prevent pressure damage and the provision of a comfortable surface for the patient to lie upon (Rithalia & Keeney2002). The various factors associated with skin comfort include, skin temperature, weight distribution and vapour exchange between the patients skin and mattress cover.

The patient was placed on a **PNEU –AIR mattress replacement.**

PNEU –AIR is an alternating, low Air loss mattress replacement system that provides patients with customized static and pulsation therapy the mattress that is driven by an electrical pump and have 28 air filled cushions or cells that are connected to the pump. These alternately inflate or deflate over a set time period, thus removing the supporting pressure from the patient's body. The PNEU AIR mattress replacement functions by changing the interface pressure by periodically deflating the air cells under the body, which redistributes the pressure on the soft tissues and encourages the reperfusion of previously, supported areas.

All staff received in house training by Meditec Medical Support Team on the correct and effective use of the PNEU AIR mattress replacement. Before using the product all staff were deemed competent in using the product.

Frequent skin assessments revealed improvement in the reperfusion of previously reddened areas. Both heels remained healthy with no evidence of persistent redness indicative of tissue damage. The patient was able to transfer easily as the motor was small and quiet. Cleaning of the mattress was easy the patient found the mattress very comfortable and helped reduce the pain in both heels

Conclusion

The PNEU AIR mattress replacement was evaluated by the nursing staff as being highly effective in relieving the pressure on both the patient's sacrum and heels.

The PNEU AIR mattress replacement proved effective in the successful management of a Grade I pressure ulcer-promoting reperfusion of previously reddened areas.

The use of the PNEU AIR mattress replacement was highly effective in contributing to the multidisciplinary team overall plan of care for the patient

Case Study 2

The patient was an elderly female resident in Private Nursing home. A detailed care plan specific to the patient's needs was developed on admission the resident was assessed for the potential risk of developing pressure sores using the Waterlow Tool. A score of 26 placed the resident in a Very High Risk category.

Existing Risk factors for pressure ulcer development were identified.

- Incontinent of urine and faeces
- Skin excoriation from both urine and faeces
- Bed bound Pressure Sheer Friction
- Required Nutritional Support via PEG tube

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The patient was placed on a **PNEU –AIR mattress replacement.**

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The primary objective for using the PNEU AIR was in the prevention of pressure ulcers by

- Redistributes the pressure on the soft tissues
- Encourages the reperfusion of previously, supported areas
- Relieving Pressure
- Reducing Sheer
- Reducing Friction

Frequent skin assessments revealed good tissue reperfusion of previously, supported high-risk pressure points. There was not evidence of any sheering or friction marks on the skin.

Conclusion

The PNEU AIR mattress replacement was evaluated by the nursing staff as being highly effective in the prevention of pressure ulcer development in a very high-risk bed bound resident

The use of the PNEU AIR mattress replacement was highly effective in contributing to the multidisciplinary team overall plan of care for the patient

Case Study 3

The patient was a 90-year-old female admitted for orthopaedic surgery to an Acute Hospital following fracture neck of femur.

A detailed care plan specific to the patients needs was developed on admission and prior to surgery. The resident was assessed for the potential risk of developing pressure sores using the Norton Score. A score of 10 placed the patient in a Very High Risk category.

Existing Risk factors for pressure ulcer development were identified .

- Orthopaedic Surgery: Austin Moore Prosthesis
- Incontinent of urine and faeces intermittently
- Skin excoriation from both urine and faeces
- Paper thin skin
- Bed bound Pressure Sheer Friction
- Poor nutrition

Nursing staff identified the need for a pressure-relieving mattress

Mattresses as support surfaces have two main functions: the redistribution of pressure to prevent pressure damage and the provision of a comfortable surface for the patient to lie upon (Rithalia & Keeney 2002). The various factors associated with skin comfort include, skin temperature, weight distribution and vapour exchange between the patient's skin and mattress cover.

The patient was placed on a PNEU –AIR mattress replacement.

PNEU –AIR is an alternating, low Air loss mattress replacement system that provides patients with customized static and pulsation therapy. The mattress is driven by an electrical pump and has 28 air filled cushions or cells that are connected to the pump. These alternately inflate or deflate over a set time period, thus removing the supporting pressure from the patient's body. The PNEU AIR mattress replacement functions by changing the interface pressure by periodically deflating the air cells under the body, which redistributes the pressure on the soft tissues and encourages the reperfusion of previously supported areas.

All staff received in house training by Meditec Medical Support Team on the correct and effective use of the PNEU AIR mattress replacement. Before using the product all staff were deemed competent in using the product.

Nursing Staff identified concerns over the following sites as high-risk areas for pressure ulcer damage:

- Sacrum Area
- Right and left heel
- Right and left Elbows

Frequent skin assessments revealed good tissue reperfusion of previously supported high-risk pressure points. There was no evidence of any sheering or friction marks on the skin.

Poor and reduced mobility continued to be a major factor of concern. Two days post operatively mobilisation was commenced by the physiotherapist, however the progress was slow, with the patient spending very long periods on bed rest.

Conclusion

The nursing staff as being highly effective in preventing pressure ulcers and relieving the pressure on heels, elbows and patient's sacrum. The PNEU AIR mattress replacement

The PNEU AIR mattress replacement proved effective in the successful promotion of reperfusion of previously reddened areas.

The use of the PNEU AIR mattress replacement was highly effective in contributing to the multidisciplinary team overall plan of care for the patient.

Staff found cleaning of the mattress easy and the motor was small and quiet. The patient found the mattress comfortable.

Case Study 4

Female patient admitted to a HSE Acute Hospital with a history of Haemoptysis for three days .On admission to the ward a detailed care plan specific to the patients needs was developed. Part of the overall patient assessment included a risk assessment for pressure ulcer development Waterlow Risk assessment tool was used and the patient was categorised as Very High Risk with a score of 22

Existing Risk factors for pressure ulcer development were identified.

- Limited mobility
- Poor nutrition
- Stage 2 Pressure ulcer on Sacrum
- Pressure Sheer Friction on account of limited mobility with long periods in bed and sitting in a chair

Nursing staff identified the need for a pressure-relieving mattress

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The patient was placed on a **PNEU –AIR mattress replacement**. On the 11/11204

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Skin assessment identified an existing pressure ulcer graded Stage 2 using the European Pressure Ulcer Advisory Panel (EPUAP) grading on the sacrum

Grade 2: partial thickness skin loss involving epidermis, dermis, or both. The ulcer is superficial and presents clinically as an abrasion or blister (EPUAP)

Nursing Staff identified a Stage 2 Pressure Ulcer as

- Sacrum Area
- Right and left heel
- Right and left Elbows

Frequent skin assessments revealed good tissue reperfusion of previously, supported high-risk pressure points .The pressure ulcer was cleaned using Normal Saline and a hydrocolloid dressing (Granuflex) placed over the wound. The wound was assessed regularly with marked improvement and ten days later re epithelialisation of the wound bed was achieved on the 21/11/04. The sacrum continued to be monitored closely as were all other high-risk pressure points. There were no signs of friction or sheer damage to the skin

Conclusion

The PNEU AIR mattress replacement was evaluated by the nursing staff as being highly effective in the redistribution of pressure on all the high-risk areas for this high dependency patient with a Waterlow score of 22. The PNEU- AIR mattress further accelerated the healing of a GRADE 2

Pressure Ulcer by the reperfusion of previously damaged and broken and the redistribution of pressure over the sacrum area
Furthermore the patient expressed her satisfaction regarding the comfort of the PNEU-AIR