To the Editor:
As a nursing student and certified nursing assistant, I am very interested in the different technologies that can be used to assist a person with limited mobility and pressure ulcers. However, there is the challenge of balancing the technology with comfort and the practicality of using the technology. Will more complications or limitations arise from this new technology, or is it what nurses have needed for a long time?

It is common knowledge among nurses to turn patients at least every 2 hours if they are not able to turn themselves or have difficulty moving. Typically, a Braden Scale is used to determine the risk of acquiring a pressure ulcer. Depending on the risk, a special kind of mattress is then used to prevent pressure ulcer formation. An automated turning mattress is one of the solutions for the prevention and relief of healing pressure ulcers.

In the December 2008 article by Futamara et al., “Evaluation of Comfort in Bedridden Older Adults Using an Air-Cell Mattress with an Automated Turning Function: Measurement of Parasympathetic Activity During Night Sleep” (Vol. 34, No. 12, pp. 20-26), it was determined that comfort is not inhibited by using a turning mattress over manual positioning by a nurse. I believe automated turning and other kinds of air mattresses do prevent and assist in the healing of pressure ulcers and do not compromise comfort. However, I am concerned that what is also placed on the mattress for incontinence is usually a problem with patients in need of pressure ulcer prevention.

According to Fader, Bain, and Cottenden (2004), peak pressure increased when either a wet or dry absorbent pad was placed between the patient and support surface. When the absorbent pad was smoothed, peak pressure decreased. Therefore, I believe it is of utmost importance to not only consider the repositioning of the patient but items on which the patient may be lying. Physically checking the sheets and absorbent pads regularly for creases and folds as well as possible incontinence is as important as manual or automated repositioning. These objects, absorbent pads and sheets, cause as much concern about pressure ulcers as the mattress itself.

I understand manufacturer instructions may state that absorbent pads are not to be placed on the pressure-relieving mattress. Unfortunately, that is not practical for patients with limited mobility and incontinence. Continuing research will need to take place to discover the best methods and beds available for patients at risk for developing pressure ulcers.

REFERENCE

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Response:
Thank you for your interest and concern regarding pressure ulcer prevention care for bedridden older adults. The aim of our article was to objectively evaluate the comfort of bedridden older adults with verbal communication difficulties, not to evaluate the risk factors for development of pressure ulcers. I fully acknowledge the limitations of the air-cell mattresses with an automated turning function. The results of our quasi-experimental study revealed that the 2 leanest bedridden older adults exhibited lower parasympathetic activity, which indicated discomfort. Before applying the air-cell mattress with an automated turning function to the bedridden older adults, anthropometric features—body mass index or contracture of the extremities—and
other positioning restrictions need to be assessed.

With regard to the risk factors for the development of pressure ulcers, I agree that one of the most frequently reported risk factors across many related studies is urinary and/or fecal incontinence. In 1997, my colleagues and I investigated the relationship between blood flow and absorbent incontinence pads for participants in a sitting position; the blood flow of those wearing wet pads decreased significantly compared with the flow of those wearing dry pads (Sugama et al., 1997). From these results, we realized the influence of an incontinence pad should not be underestimated. I also agree it takes a long time for caregivers and nurses to provide bedridden older adults with incontinence care.

Japanese bedridden older adults have another specific risk factor related to pressure ulcer development: extremely bony prominence (EBP). This has never been described in the Braden, Norton, or other risk assessment scales. In an epidemiological study (Ohura, 2002), EBPs were selected by a multiple logistic regression analysis as one of the significant pressure ulcer risk factors. The Photo shows an EBP in the sacral region of a bedridden older adult. According to the figure in Fader, Bain, and Cottenden’s (2004) study, the phantom used had no EBP in its sacral region. Therefore, I believe careful consideration is needed before adapting the results from Fader et al.’s study to Japanese bedridden older adults.

Recently, my colleagues and I carried out a research project concerning skin problems related to older adults with urinary and/or fecal incontinence (Shigeta et al., 2009). Results from this project should contribute to assisting care for bedridden older adults at high risk for developing pressure ulcers.

REFERENCES


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Photo. Pictured is the sacral area of a bedridden older adult in the right side lying position. The hip muscle atrophy and extreme bony prominence can be seen over the sacral area.