OHTAC Recommendation

Prevention and Management of Pressure Ulcers

Presented to the Ontario Health Technology Advisory Committee in July 2009

October 2009

OHTAC Ontario Health Technology Advisory Committee

Background

The Ontario Health Technology Advisory Committee (OHTAC) met on October 24, 2008 and on May 22, 2009 to consider the evidence for the treatment of pressure ulcers and the prevention of pressure ulcers, respectively.

A pressure ulcer is defined as a localized injury to the skin/and or underlying tissue occurring most often over a bony prominence and caused by pressure, shear, or friction, alone or in combination. Those at risk for developing pressure ulcers include the elderly and critically ill, as well as persons with neurological impairments and those who suffer conditions associated with immobility. Pressure ulcers are graded or staged along a 4-point classification system denoting severity. Stage I represents the beginnings of a pressure ulcer and stage IV, the severest grade, consists of tissue loss with exposed bone, tendon, and or muscle. The prevalence of pressure ulcers at stage 1 or greater in Ontario has been estimated to range between 13.1% and 53%, with nonacute health care settings exhibiting the highest prevalence rates.

The evidence of effectiveness was reviewed for five interventions intended to prevent pressure ulcers including risk assessment, distribution devices, nutritional supplementation, repositioning, and incontinence management. The evidence of effectiveness for seven interventions intended to treat pressure ulcers was also reviewed, including that for dressings, biological therapies, distribution devices, adjunctive physical therapies, nutritional therapy, and multidisciplinary wound care teams.

OHTAC Findings

Prevention of Pressure Ulcers

- Moderate quality evidence indicates that an alternative foam mattress is superior to a standard foam hospital mattress for reducing the incidence of pressure ulcers [RR= 0.31, 95% CI (0.21-0.46)]. The evidence does not support the superiority of one particular type of alternative foam mattress.
- Low quality evidence indicates that a 4-hourly turning schedule using a vesico-elastic polyurethane foam mattress may be superior to a 2-hourly or 3-hourly turning schedule and a standard foam mattress to reduce the incidence of grade 1 or 2 pressure ulcers [RR= 0.70, 95% CI (0.52-0.93)].
- Low quality evidence indicates that allocating the type of pressure-relieving equipment according to the person's level of pressure ulcer risk statistically and significantly reduces the incidence of pressure ulcers [RR=0.11, 95% (0.03, 0.46)].
- Low quality evidence indicates a structured skin care protocol may reduce the incidence of grade 1 or 2 pressure ulcers in persons with urinary and/or fecal incontinence [RR= 0.41, 95% (CI, 0.21–0.79)].
- Low quality evidence indicates a pH-balanced cleanser may reduce the incidence of grade 1 and 2 pressure ulcers compared with soap and water in persons with urinary and fecal incontinence [RR= 0.32, 95% CI (0.13–0.82)].
- Very low quality evidence indicates that use of a risk assessment tool increases the number of preventative measures used per person.
- Very low quality evidence indicates that preventative interventions are initiated earlier in the care continuum when a risk assessment tool is used to assess a person's risk of developing a pressure ulcer.
- Very low quality evidence indicates that nutritional supplementation reduces the incidence of pressure ulcers [RR=0.85, 95% CI (0.73-0.99)].

Treatment Pressure Ulcers

- Moderate quality evidence indicates that hydrocolloid dressing is superior to saline gauze dressings for complete healing of stage II and III pressure ulcers [RR =2.91, 95% CI (1.52, 5.57)].
- Low quality evidence indicates that a hydrogel dressing is superior to a hydrocolloid dressing for complete healing of stage II and III pressure ulcers [RR= 1.71, 95% CI (1.05, 2.79)] and povidone soaked gauze for complete healing of stage I-III pressure ulcers [RR=1.55, 95% CI (1.03, 2.33)].
- Low quality evidence indicates that nerve grow factor is superior to placebo for complete healing of stage II-IV pressure ulcers [RR= 8.00, 95% CI (1.11, 57.57)].
- Low quality evidence indicates that an alternate pressure mattress with heel guards is superior to one without heel guards for the complete healing of stage II-IV pressure ulcers [RR= 1.67, 95% CI (1.07, 2.59)].
- Low quality evidence indicates that a profiling bed is superior to a flat-based bed for complete healing of stage I pressure ulcers [RR=5.0, 95% CI (1.45, 17.27)].
- Very low quality evidence indicates that a multidisciplinary wound care team is superior to standard care for complete healing of pressure ulcers.
- Non-significant results were found for the effectiveness of mechanical debridement, adjunctive physical therapies, and nutritional therapies for complete wound healing.

An expert panel of wound care specialist reviewed the above findings and recommended that:

- The best dressing depends on the characteristics of the wound and consultation with a wound care team should be undertaken to determine the best dressing choice for the wound status.
- Different biologics are used for different wound stages and therefore consultation with a wound care team should be undertaken to determine the best biologic for the stage of the wound.
- Different distribution surfaces are used for varying patient acuity. Consultation with a wound care team should be undertaken to determine the optimal surface choice for the status of the patient.
- A wound care team is needed to manage wound healing as a standardized protocol is difficult to determine because of the variables to be considered, including the stage of wound, wound integrity (wet or dry), and wound status (infected, non-infected).

OHTAC Recommendations

Prevention of Pressure Ulcers

Acute Care

For the prevention of pressure ulcers, OHTAC recommends that a high quality foam mattress should be provided to all persons in an acute care setting.

Operating Room

For the prevention of pressure ulcers, a high quality support surface (foam or gel) should be used during surgical procedures of greater than 90 minutes in duration. Strongest evidence exists for using a gel pad for this population.

Long-Term Care and Community Care

For the prevention of pressure ulcers, a high quality foam mattress should be provided to all residents in long-term care facilities. The Community Care Access Centre (CCAC) should use the Pressure Ulcer Risk Score (PURS) to assess a client's risk for developing a pressure ulcer.

Where risk is identified, a high density foam mattress should be used to prevent the development of pressure ulcers.

Emergency Room Care

For the prevention of pressure ulcers, OHTAC recommends using a high quality foam mattress for all persons accessing emergency room care.

Patient Re-positioning Practices

There is low quality evidence to suggest that persons using a high quality foam mattress may be turned at a minimum of every 4 hours. Therefore, OHTAC recommends a field study be undertaken to determine the optimal turning schedule (2 hr vs.4 hr) for persons using a high density foam mattress

Until better evidence is available, all healthcare facilities should follow the current RNAO 2005 nursing best practice guidelines, which state that individuals restricted to bed be repositioned at least every 2 hours or sooner if at high risk for pressure ulcers. This complies with the current Ontario Long-Term Care home standard B3.40.

Treatment of Pressure Ulcers

For the treatment of pressure ulcers, OHTAC recommends that a field evaluation be undertaken to determine the effectiveness of a multidisciplinary wound care team for wound healing. It is also recommended that an expert panel review those therapies whose effectiveness is supported by low quality evidence to advise on which therapies would benefit from a field evaluation. Until better evidence is available, all healthcare services should follow best clinical practice for the treatment of pressure ulcers.