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AN INVESTIGATION INTO THE PREVENTION OF BLISTERING IN POST OPERATIVE WOUNDS: RESULTS OF A DELPHI SURVEY

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BACKGROUND

Surgical patients are at risk of developing post-operative wound complications including blistering and infection. In patient stays in hospital could be lengthened; costs increase and morbidity/ mortality rates can be adversely affected (Gupta et al, 2002). There are a limited amount of studies that have examined the effect of different dressings on wound healing providing no conclusive recommendations as to the most appropriate and effective choice of wound dressing (Tustanowski 2009). This poster presents the results of an international 2 stage Delphi survey carried out via e mail, to achieve consensus between experts and practitioners, as to the most clinical and cost effective dressings and post-operative wound management to prevent blistering and other complications.

AIMS OF THE DELPHI SURVEY

- To establish an expert reference group (ERG) to consider the problem of wound blistering.
- To develop and evaluate expert consensus opinion to establish a working clinical and cost effective guideline and benchmarks, in the prevention and management of wound blistering.

METHODS

A survey questionnaire was developed, using item pool analysis from national policy, prior published research and research group agreement/ consensus. Two rounds of the Delphi process were completed, with delivery of the 1st and refined 2nd questionnaires via e-mail. All participants remained anonymous to each other but did receive the data analysis from the 1st round of questionnaires prior to undertaking the second round.
17 prospective participants were invited to be a member of the Delphi Panel from England, Wales, Ireland, Scotland, Scandinavia, India, Australia and the USA. Of the 17 people invited 13 agreed to be involved.
Survey data from both rounds was entered into PASW (SPSS) Version 18. Descriptive statistics relating to respondents' opinions of treatment of wound blistering and wound dressing characteristics were derived for each data set independently, with the results from the 2nd round of the analysis being additionally used as a cross-check against results from the 1st round. A scoring system was assigned to the responses for consensus analysis and to facilitate comparison between the 2 rounds. Due to the small size of the samples, inferential statistics were not derived for either round of the survey.

RESULTS

1st round analysis

- The mean number of knee replacements performed was 298 per year (range 42 – 700)
- The median number of hip replacements performed was 305 per year (range 100 – 500)
- Estimates of percentages of episodes of blister formation ranged from 1% to 55%. This corresponded to a range of episodes of 3 to 385, with a mean of 93.4 episodes of wound blistering per institution.

The Delphi panel questionnaire responses, and scores, demonstrated that that an ideal wound dressing that would help to prevent formation of wound blisters:

- should conform easily to the wound
- be easy to apply and remove
- allow for swelling
- minimise pain on removal.

Delphi participants were in agreement that the primary wound dressing should be left in situ for as long as possible, providing there was no excessive oozing or signs of infection.

Characteristics of an ideal wound dressing

Characteristic	Score (out of 60)
Easy to apply	58
Conform to the patient's wound	57
Allow for swelling	59
Easy to remove	57
Be flexible	59
Pain-free on removal	56
Not stick to the wound	59
Be transparent	50
Be able to control exudate	54
Be available as microbial	42
Be able to remain in place for 7-14 days	48
Available in variety of sizes	58
Cost effective	55
Supported by research	56
Available in acute and primary health care	56

WHO SHOULD ASSESS THE WOUND AND PRESCRIBE APPROPRIATE WOUND DRESSING?

8 respondents reported that the nursing staff would be most likely to first assess the patient's wound post-operatively. 2 respondents reported that this could be done by either a doctor or a member of the nursing staff. 2 respondents did not provide a response to this question.
4 respondents reported that the nursing staff would be most likely to prescribe the choice of wound dressing following first dressing removal. 2 respondents reported that this was likely to be done by a doctor or surgeon. 3 respondents reported that this was likely to be done by either a doctor/ surgeon or a member of the nursing staff. 3 respondents did not provide a response to this question.
In all instances where the nursing staff would be most likely to prescribe the choice of wound dressing following first dressing removal, they would also be most likely to first assess the patient's wound post-operatively.

SECOND ROUND ANALYSIS

Wound blistering

In order to assess the strength of feeling concerning the statements given in part 1, a scoring system was devised, in which "Agree" was scored 1; "Disagree" was scored 0 and "Neither agree nor disagree" was scored ½. Hence each statement could be scored out of a maximum of 9.
It was found that respondents were fairly consistent in their responses to these statements, with almost all statements being scored either consistently highly or consistently poorly.

The highest scoring statements were:

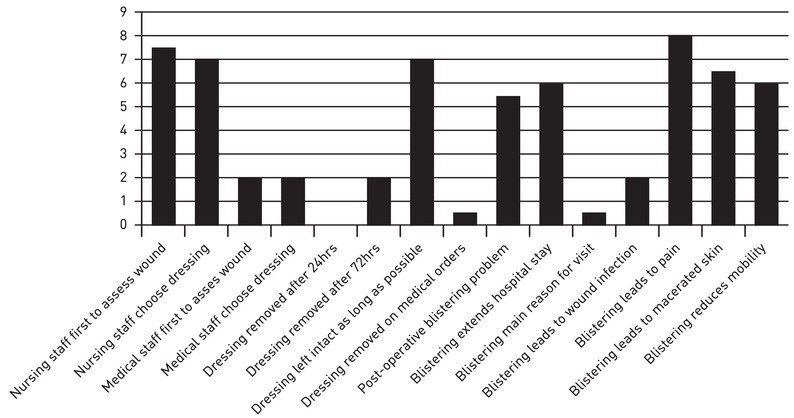
- *Wound blistering increases pain (score 8/9)*
- *Registered nursing staff should be the first to assess the wound post-operatively (score 7.5/9)*

The lowest scoring statements were:

- *Wound dressing should be removed 24 hours post-operatively and the wound assessed (score 0/9)*
- *Wound dressing should be removed only on medical orders (score 0.5/9)*

Wound blistering is main reason for a community

Figure 1 : Results of all statements



DISCUSSION

The authors recognise that the Delphi panel was relatively compact, however the study arguably provides some useful data that can be used to identify the consequences of wound blistering and the important factors that need to be considered when choosing a wound dressing to prevent blistering.

1. Nursing staff should be the first professional group to assess the wound post operatively and recommend an appropriate wound dressing
2. The primary post operative wound dressing should be left in situ for as long as possible, providing there is no excessive oozing or signs of infection
3. An ideal wound dressing that will help to prevent formation of wound blisters should conform easily to the wound, be easy to apply and remove, allow for swelling and minimise pain on removal.

The sample size was relatively small but it does provide generalisable data that can be used to identify the consequences of wound blistering and the important factors that need to be considered when choosing a wound dressing to prevent blistering.
It was interesting to note that the majority of respondents stated that nursing staff should be the first to assess wound post-operatively and choose the appropriate wound dressing. The majority of respondents agreed that the wound dressing should be left intact for as long as possible and that pain was the main consequence of wound blistering.
Respondents strongly agreed that post operative wound blistering could lead to increased pain; macerated skin; lead to wound infection; reduce mobility and increase a length of stay as an in- patient. They did not rate strongly that wound blistering was the main reason for a district nurse to visit patients on discharge home, perhaps this was because patients remained in hospital longer for the blistering to be treated. The most important factor in preventing a wound blister was the choice of post operative wound dressing.

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