



2016

Oppsummert forskning om forebygging av trykksår

Systematisk oversikt

Systematic reviews on preventing pressure ulcers: a systematic review
This is an excerpt from the full technical report, which is written in Norwegian.
The excerpt provides the report's main messages in English.

**This is an excerpt from the full technical report,
which is written in Norwegian.
The excerpt provides the report's main messages in English.**

Published by: National Institute of Public Health, Division of Health Services

Title Systematic reviews on preventing pressure ulcers: a systematic review

Norwegian title Oppsummert forskning om forebygging av trykksår

Responsible Camilla Stoltenberg, *Director*

Authors Holte , Hilde H Holte
Underland, Vigdis
Hafstad, Elisabet

ISBN 978-82-8082-741-8

Report # 2016-11 [excerpt]

Type of publication a systematic review

No. of pages 41 (56 including appendices)

Client The Western Norway Regional Health Authority

Subject heading Pressure ulcers
(MeSH)

Citation Holte HH, Underland V, Hafstad E. Systematic reviews on preventing pressure ulcers, Folkehelseinstituttet. Research overview Juli 2016. ISBN (digital): 978-82-8082-741-8.

Key messages (English)

Norwegian studies imply that between 7 and 15 per cent of inpatients develop pressure ulcers. They develop more often in specific groups of patients, like patients with spinal cord injury, hip fracture and patients in intensive care.

Pressure ulcers are areas of localized damage to the skin and underlying tissue, believed to be caused by pressure, shear force or friction. Pressure ulcers occur fast, it has been documented to develop within one hour. Age, immobility, inadequate nutrition, sensory deficiency, multiple comorbidities, reduced activity, circulatory abnormalities, and dehydration have been identified as some of the risk factors.

We included seven systematic reviews on prevention of pressure ulcers published in the Cochrane Database of Systematic Reviews in 2010 or later.

- Nutritional supplements consisting of both energy and protein probably makes little or no reduction of the development of pressure ulcers in patients with poor nutritional status.
- Some mattresses probably reduce the development of pressure ulcers compared to standard foam hospital mattresses. Standard foam hospital mattresses are seldom described. The documentation identified is not sufficient for guiding a choice between various foam mattresses. There is a need for an overview of mattresses and pillows that could help the health services to make wise choices in the procurement process.
- Dressings applied over bony prominences may reduce the development of pressure ulcers.
- For several interventions there is uncertainty if they have effect, due to few studies. These interventions comprise repositioning, frequency of repositioning, other types of surfaces compared to alternating pressure, various risk assessment tools, topical agents applied on bony prominences.

Many interventions were evaluated in just one study. To obtain a more trustworthy result, it is necessary that the studies are repeated.

Title:

Systematic reviews on preventing pressure ulcers

Type of publication:**Systematic review**

A review of a clearly formulated question that uses systematic and explicit methods to identify, select, and critically appraise relevant research, and to collect and analyse data from the studies that are included in the review. Statistical methods (meta-analysis) may or may not be used to analyse and summarise the results of the included studies

Doesn't answer everything:

- Excludes studies that fall outside of the inclusion criteria
 - No health economic evaluation
 - No recommendations
-

Publisher:

Norwegian Knowledge Centre for the Health Services

Updated:

Last search for studies: June 2016.

Peer review:

Ida Marie Bredsen, nurse and PhD-candidat, OUS, Edda Johansen, professor, Institutt for sykepleievitenskap, Drammen

Executive summary (English)

Background

Norwegian studies imply that between 7 and 15 per cent of patients develop pressure ulcers. They develop more often in specific groups of patients, like patients with spinal cord injury, hip fracture and patients in intensive care.

Pressure ulcers are areas of localised damage to the skin and underlying tissue, believed to be caused by pressure, shear force or friction. Pressure ulcers can occur fast, it has been documented to develop within one hour. Age, immobility, inadequate nutrition, sensory deficiency, multiple comorbidities, reduced activity, immobility, circulatory abnormalities, and dehydration have been identified as some of the risk factors.

When there are so many risk factors, a systematic review of reviews published in 2010 or later could identify if there are reviews on effect studies of new interventions on preventing pressure ulcers or new documentation that could be part of a discussion for future development of the Patient Safety Program.

Objective

To review systematic reviews published 2010 or later in the Cochrane Database of Systematic Reviews on interventions prevention of pressure ulcers.

Method

We searched for systematic reviews about prevention of pressure ulcers. We included systematic reviews that were published in 2010 or later in the Cochrane Database of Systematic Reviews or covered by Agency of Healthcare Research and Quality's (AHRQ) report "Making Health Care Safer II".

We evaluated the systematic reviews identified in the Cochrane Database of Systematic Reviews to be of high quality by use of checklist to evaluate the quality of systematic reviews. According to AHRQ's report, the interventions are multifactorial, and are not covered by effect studies. We have therefore based our work on

Cochrane Database of Systematic Review, where each intervention is evaluated separately.

We have included seven reviews and have done no further searches, neither for systematic reviews nor for primary studies. We have extracted data about relevant interventions for preventing pressure ulcers, and graded our confidence in the results using GRADE.

Results

Nutritional supplements consisting of both energy and protein probably makes little or no reduction, relative risk (RR) 0,86 (95 % confidence interval (CI): 0, 73-1,00), on the development of pressure ulcers in patients with poor nutritional status.

Some mattresses probably reduce the development of pressure ulcers compared to standard foam hospital mattresses, RR 0,38 (95 % CI: 0,24-0,61). A Low-tech constant low-pressure support may reduce the development of pressure ulcers compared another support of a similar kind, RR 0,45 (95 % CI: 0,36-0,56). A mattress with alternating pressure may reduce, RR 0,31 (0,17-0,58) the development of pressure ulcers compared to standard hospital mattresses. A mattress with alternating pressure possibly makes little or no reduction, RR 0,85 (95 % CI: 0,64-1,13) on the development of pressure ulcers compared to a mattress with constant low pressure. Standard foam hospital mattresses are seldom described. The documentation identified is not sufficient for guiding a choice between various foam mattresses. There is a need for an overview of mattresses and pillows that could help the health services to make wise choices in the procurement process.

Dressings applied over bony prominences may reduce the development of pressure ulcers, RR 0,21 (95 % CI: 0,09-0,51).

We cannot decide on effect on preventing pressure ulcers of some interventions, due to few studies. The interventions comprise repositioning, frequency of repositioning, other types of surfaces compared to alternating pressure, various risk assessment tools, use of topical agents on bony prominences. The authors of two reviews intended to review studies of massage and wound-care teams, but could not identify any effect studies that could be included.

Discussion

The studies of different supports show very clearly the problem with heterogeneity. Even though many studies compare a specific mattress with a standard foam mattress, the standard foam mattress it not described. The studies are performed throughout the period 1964-2013, and there is a possibility that what is described as

a standard foam hospital mattress has changed. It is also a challenge to ascertain if countries like Australia, Canada and the Netherlands have chosen equivalent mattresses as standard.

Six of 59 studies that have evaluated various mattresses are published in 2010 or later, and could be of special interest for the Patient Safety Program. Only one of these studies comprise enough patients that we have confidence in the effect estimate, «single stage inflation alternating pressure mattress» compared with «multi stage inflation alternating pressure mattress» indicate no significant differences between the groups.

Conclusion

Nutritional supplements consisting of both energy and protein probably makes little or no reduction on the development of pressure ulcers in patients with poor nutritional status.

Some mattresses probably reduce the development of pressure ulcers compared to standard foam hospital mattresses. Dressings applied over bony prominences may possibly reduce the development of pressure ulcers. For the interventions repositioning, frequency of repositioning, other types of surfaces compared to alternating pressure, various risk assessment tools, topical agents on bony prominences, it is unclear if the interventions have effect.

For many of the interventions there is just one comparison. To have a more trustworthy effect estimate, it is necessary that the studies are repeated. There is a need for an overview of mattresses and pillows that could help the health services to make wise choices in the procurement process.