Effectiveness of prevention programmes for hand dermatitis: a systematic review of the literature

CRD summary
There was moderate evidence for the effectiveness of skin-care education and skin protection measures in reducing occurrence and improving adherence and low level evidence for the effect in improving clinical outcomes. Further research was needed. The review was generally well conducted. The authors’ conclusions are suitably cautious and appropriately acknowledge the limitations in the evidence base.

Authors’ objectives
To evaluate whether comprehensive prevention programmes for hand dermatitis that included worker education as an element were effective for occurrence, adherence to prevention methods, clinical and self-reported outcomes and costs compared with usual care or no intervention.

Searching
PubMed and EMBASE were searched from inception to 27 January 2010 for articles published in English. Search terms were reported. Reference lists of selected articles were searched.

Study selection
Randomised controlled trials (RCTs) or controlled trials of primary and/or secondary prevention programmes that included education versus usual dermatitis care or no intervention in patients at risk of or with symptoms (self-reported or investigator assessed) of hand dermatitis were eligible for inclusion. Prevention programmes could be combinations of skin protection measures, skin care education, rehabilitation, nurse, physician or co-ordinated care and occupational intervention. Trials had to report on one of the outcomes of occurrence of hand dermatitis or eczema, adherence to prevention measures, clinical examination outcomes, self-assessment outcomes and costs.

The included trials studied various composite prevention programmes versus control in individuals employed as gut cleaners in swine slaughterhouses, workers in multiple manufacturing environments, nurse trainees, geriatric nurses, employees at nursing homes and student auxiliary nurses.

Two reviewers independently performed study selection. Disagreements were resolved by discussion.

Assessment of study quality
Trial quality was assessed using the Cochrane Criteria for randomisation, allocation concealment, blinding, drop-out rate, intention-to-treat, selective reporting, baseline characteristics, cointerventions, compliance and outcome assessment. Maximum possible score was 11. Trials that scored less than 6 (or 5 if not randomised) were deemed low quality. The overall quality of evidence for each outcome measure was estimated as high, moderate, low or very low using GRADE criteria.

Two reviewers independently performed quality assessment. Disagreements were resolved by consensus.

Data extraction
Data were extracted on occurrence of hand dermatitis or eczema, adherence to prevention measures, clinical examination outcomes and self-assessment outcomes. No cost-effectiveness studies were found.

Two reviewers independently performed data extraction.

Methods of synthesis
The authors stated that statistical pooling was inappropriate due to heterogeneity in participants, interventions, comparators and outcomes. A narrative synthesis was undertaken. Trials were grouped by outcomes.

**Results of the review**

Seven trials were included in the review: five RCTs and two controlled trials. Length of follow-up ranged from two weeks to three years. Three trials were graded at low quality (1 to 5 out of 11) and four trials were graded as high quality (5 to 7 out of 11). None of the trials blinded participants or adequately reported allocation concealment. Only one trial reported the method of randomisation adequately.

There was moderate quality evidence that prevention programmes had significantly positive effects on occurrence (four trials) and on adherence to prevention measures (five trials) when compared with control. There was low-quality evidence that prevention programmes had significantly positive effects on clinical outcomes and skin condition (five trials) and self-reported outcomes (four trials) when compared with control.

**Authors’ conclusions**

There was moderate evidence for the effectiveness of skin care education and skin protection measures in reducing occurrence and improving adherence and low level evidence for the effect in improving clinical outcomes. Further research was needed.

**CRD commentary**

Inclusion criteria for the review were defined clearly. Two relevant data bases were searched. There was potential for language bias, as only articles in English were included (acknowledged by the authors). Publication bias was not assessed and could not be ruled out. Attempts were made to reduce reviewer error and bias throughout the review process. Quality assessment was undertaken using a standard checklist that indicated that the included trials were of variable quality (acknowledged by the authors). A narrative synthesis was appropriate given the heterogeneity across trials. The variable quality of included trials and differences across trials limited the reliability of the evidence base (acknowledged by the authors).

The review was generally well conducted and the authors’ conclusions are suitably cautious.

**Implications of the review for practice and research**

**Research:** The authors stated a need for high-quality RCTs and an urgent need for cost-effectiveness studies. Further research was needed on organisational measures.

**Practice:** The authors stated that skin prevention programmes, including skin-care education programmes, should be part of training for people who work in wet conditions or high-risk occupations. Working organisations should play an active role in providing opportunities for prevention by making protection measures available and by organising educational meetings.

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