A systematic review of the efficacy of the management of paraneoplastic sweating in palliative care populations

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Background:
• Paraneoplastic sweating is induced indirectly by malignancy, via production of hormones or chemical messengers.
• When sweating occurs pathologically, it can interrupt sleep, causing daytime hyper-somnolence, fatigue, mood disturbance and carer-burden.
• Various therapeutic approaches have been trialled but there are no published clinical guidelines in place.

Aims:
• This review aims to present and critically appraise the published literature regarding pharmacological and non-pharmacological treatments for paraneoplastic sweating.

Method:

**SEARCH TERMS**
(palliative OR cancer OR neoplasms OR malignancy) AND (sweat OR hyperhidrosis OR diaphoresis OR transpir OR perspi OR sudomotor)

**DATABASES**
HMIC Health Management Information Consortium International Pharmaceutical Abstracts Ovid MEDLINE* (including in progress and non-indexed citations) Embase & Embase Classic

**EXCLUSIONS**
- Duplicate papers
- Non-English language
- Papers not relevant to research question

**ANALYSIS & GRADING OF EVIDENCE**
Data from the review were analysed according to:
- Type of study
- Population
- Recruitment
- Power
- Presence of a control group
- Assessors & patient blinding
- Accountability for drop-outs
- Use of validated outcomes measures
- Measurement of side effects
- Evidence was graded according to the GRADE approach, recommended by the Cochrane Handbook

**RESULTS**

**Types of paper**
- Case series
- Case report
- Incidental finding in trial
- Trial

**Quality of evidence (GRADE)**
- Low
- Very low

**Other considerations for this treatment**
- May only be applicable in neural crest tumours
- May also decrease anorexia/ cachexia/ fatigue
- Risk of fatal arrhythmia
- Nototriety from teratogenicity

**REFERENCES**

**DISCUSSION**

**Conclusions**
• There is very low quality evidence for treatment of paraneoplastic sweating in palliative care populations.
• Results are largely anecdotal, relying on case reports.
• Clinical trials identified were methodologically flawed:
  - Underpowered
  - Uncontrolled
  - Unblinded
  - Non-specific or un-validated outcomes measures
  - Little accountability for recruitment bias or drop outs.

**Research recommendations**
• Promising results from case studies could provide hypotheses for future research
• Difficulty recruiting subjects may necessitate large multi-centre studies.
• Trials should ideally:
  - Be randomised, controlled and double-blinded
  - Have a mixture of qualitative and quantitative outcomes measures
  - Use specific and validated tools
  - Use multivariate analysis to control for confounders e.g. cancer type, comorbidity, age

**Clinical recommendations**
There is not yet enough good-quality evidence available to form a clinical guideline. However in the absence of stronger evidence:
1. Gabapentin and Acupuncture have already been established as safe and cost-effective treatments for other symptoms in palliative care
2. Wicking fabrics and warm air are unlikely to cause harm and are cheap and lo-tech