The Hierarchy of Evidence

The Hierarchy of evidence is based on summaries from the National Health and Medical Research Council (2009), the Oxford Centre for Evidence-based Medicine Levels of Evidence (2011) and Melynyk and Fineout-Overholt (2011).

I  Evidence obtained from a systematic review of all relevant randomised control trials.

II  Evidence obtained from at least one well designed randomised control trial.

III  Evidence obtained from well-designed controlled trials without randomisation.

IV  Evidence obtained from well designed cohort studies, case control studies, interrupted time series with a control group, historically controlled studies, interrupted time series without a control group or with case-series

V  Evidence obtained from systematic reviews of descriptive and qualitative studies

VI  Evidence obtained from single descriptive and qualitative studies

VII  Expert opinion from clinicians, authorities and/or reports of expert committees or based on physiology


<table>
<thead>
<tr>
<th>Reference (include title, author, journal title, year of publication, volume and issue, pages)</th>
<th>Evidence level (I-VII)</th>
<th>Key findings, outcomes or recommendations</th>
</tr>
</thead>
</table>
| Alberta Health Services (2005) Management of subcutaneous injection sites in palliative care patients, Covenant Health and Seniors Health Regional Palliative Care Program, Clinical Guideline | VII | - Palliative Care Clinical Guideline  
- Outlines the insertion procedure, administration of medications and documentation required for insertion of the subcutaneous device |
| Breen, M (2006) An evaluation of two subcutaneous infusion devices in children receiving palliative care. *Paediatric Nursing*, 18(4) | III | - Comparing 2 different subcutaneous devices looking at the length of time the device was in situ and the skin reactions around the sites  
- Limited numbers in the study |
<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Year</th>
<th>Reference</th>
<th>Evidence Level</th>
<th>Findings</th>
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</table>
| de Jong, M.E.A., Carbiere, T. & van den Heuvel-Eibrink, M.M. | 2006 | The use of an insufion device for the administration of G-CSF in pediatric cancer patients. *Supportive Care in Cancer*, 14(1), pp 98-100 | IV | - 93 G-CSF periods were registered (29 patients) of which an insufion device was used in 45 G-CSF periods (21 patients); median range of patients with insufion was 3yrs  
- 8 patients (median age 13yrs) preferred daily subcutaneous injections: hypothesised adolescents may be more likely to prefer daily injections reflecting the need for self control and normality  
- 2 G-CSF periods by an insufion device were complicated by mild induration of the insertion site and low-grade fever  
- An insufion device was reported as safe, easy and reliable in the care of children with cancer, improving quality of life especially in younger children |
- Small sample (20 children) supports the use of an insufion device for all children receiving cytokines  
- Study demonstrated a strong preference for the use of an insufion compared to daily subcutaneous injections (75% of patients)  
- Decrease shown in local reaction when using an insufion; no difference in febrile episodes between use of an insufion or daily subcutaneous injections  
- Preference amongst children over 7 years of age for daily injections  
- Recommends that insufion devices should be an option for all children receiving cytokines |
- Concluded that using indwelling subcutaneous catheters for insulin injections for up to 4 days does not affect the absorption of short-acting insulin |
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<tr>
<th>Study / Publication</th>
<th>Grade</th>
<th>Key Findings</th>
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</table>
- Demonstrated pre-injection anxiety and injection pain where lower when using indwelling catheters for introducing insulin injections at the onset of diabetes |
<p>| Morgan, S. &amp; Evans, N. (2004) A small observational study of the longevity of syringe driver sites in palliative care. <em>International Journal of Palliative Nursing</em>, 11(2) | VI    | - A literature review on the topic and review of practitioners in the field on the diluents that are used in their practice including nurses, pharmacists and hospitals via an email survey |</p>
<table>
<thead>
<tr>
<th>Reference</th>
<th>Grade</th>
<th>Summary</th>
</tr>
</thead>
</table>
| NHS Greater Glasgow and Clyde Health Authority, Scotland (2010) Guidelines for the use of subcutaneous medications in palliative care for adults – Primary care and hospices, NHS Greater Glasgow and Clyde Health Authority Scotland, 2010, Clinical practice guideline | VII   | Outlines the reason, procedure and administration of medications via the subcutaneous route in palliative care  
- Extensive list of compatible drugs and medications uses for which symptom relief |
- Extensive list of compatible drugs and medications uses for which symptom relief |
- Outlines the use of an subcutaneous Intima device trial in an adult oncology setting to decrease the number of subcutaneous injections, incidence of needle phobia and decrease pain and bruising at the injection site |
- Morphine administered via insuflon, viewed as a safe alternative to intravenous morphine administration |
- Discusses the correct site, insertion technique, care and removal of the subcutaneous device |
| Winnipeg Regional Health Authority, Canada (2010) Procedure for subcutaneous insertion, removal, medication administration and fluid administration for community palliative care patients, Winnipeg Regional Health Authority, Canada, 2010, Clinical Guideline | VII | - Clinical practice guideline outlining the procedure around insertion of BD Sat-T-Intima |
| Women’s and Children’s Hospital, Adelaide (2009) Indwelling Subcutaneous Catheter (Insufion) Management, “Paediatric Nursing Clinical Standards, – Women’s and Children’s Hospital, Adelaide, South Australia Clinical Standard | VII | - Clinical standard from tertiary paediatric hospital concerning the management of an insufion - 5 references included to support clinical standard |