Subcutaneous administration of drugs in the elderly: survey of practice and systematic literature review

Vukasovic C, Fonzo-Christe C, Wasilewski-Rasca AF, Bonnabry P
Pharmacy, University Hospitals of Geneva (HUG), Switzerland

BACKGROUND

Over the last decade, administration of medications like morphine, hydromorphone, metoclopramide, haloperidol or midazolam by subcutaneous route has regain popularity in palliative care and geriatric setting. Similarly, subcutaneous rehydration also called hypodermoclysis seems to be a good alternative to intravenous rehydration in elderly patients and terminal cancer patients when oral intake is severely restricted. However, the majority of drugs used are unlicensed for subcutaneous use and there is a lack of information in the literature about this practice.

OBJECTIVES

- Survey of subcutaneous (SC) drug use and hypodermoclysis in a geriatric hospital department (404 beds, mean age of patients 85)
- Evaluation of license status and systematic literature review of 34 drugs used subcutaneously in geriatric setting and comparison with practice

DESIGN

- Standardized questionnaire to 27 nursing teams and 52 physicians
- License status in official on-line information for Switzerland (CH), France (F), Germany (D) and United Kingdom (UK) (Compendium suisse des médicaments, Vidal, Rote Liste, BNF in March 2003)
- Systematic literature review using Medline (1966 – March 2003) and Embase Geriatrics & Gerontology (1992 – 2002) of articles published in French, German or English and quality evaluation

RESULTS

Evaluation of practices - general datas:
- Response rate: 22 (81%) nursing teams and 37 (71%) physicians (n = 59)
- Use of SC route: palliative care (83% of questionnaire), dehydrated patients (54%), patients with central nervous disorders (25%) or with cancer (22%), and when oral or IV administration is impossible (73% resp. 68%) or because of comfort for the patient (27%)
- Adverse reactions: see Fig. 2

Evaluation of practices – administration of drugs:
- Frequency: SC route is daily used in the department
- Drugs mainly used: morphine (98%), haloperidol (90%), furosemide (70%), hydromorphone (56%)
- Site of injection: thighs (100%), arm (82%), abdominal wall (77%)
- Mode of administration: slow (82%), bolus injection (36%), syringe driver (9%)

Evaluation of practices – administration of fluids:
- Frequency: Hypodermoclysis is used many times / week
- Fluids mainly used: NaCl 0.9% (95%) and Glucosalin (30%)
- Site of injection: thighs (96%), back (23%), arm (18%)
- Mode of administration: mean duration 7 days (min 1, max 21); 250 ml to 1000 ml / inj. site in 2 to 24 hours and 500 ml to 2000 ml/patient/day

Evaluation of license status:
- Only 13 of 34 drugs (38%) licensed for SC use in CH (8), UK (7), F (6) or D (6) (Tab.1)

Systematic literature review:
- Of 231 published articles, 43 identified as interesting for SC drug use and 25 for rehydration
- Only morphine and rehydration intensively evaluated in the literature in studies of high level of evidence (Tab.2)
- Fentanyl, hydromorphone, pethidine, butyloxypolamine, caffetaxone, and chlorpromazine at least evaluated in one study of good methodology (Tab.2)
- Haloperidol and furosemide, although frequently used, are unlicensed in all four countries and there is no robust studies in the literature

CONCLUSIONS

SC drug use and hypodermoclysis is performed daily in our geriatric department. Only few drugs are licensed for SC route and well evaluated in the literature. Consequently physicians strongly engaged their responsibility in the prescription. More datas of good quality are necessary to validate the use of haloperidol and furosemide by SC route.

REFERENCES


Ce poster peut être téléchargé et imprimé à l'adresse http://www.hcuge.ch/Pharmacie/rd/posters.htm