Coming home to go...
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Chapter 5
Consultative palliative care for nausea and vomiting in a home-care situation

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Ladies and gentlemen,

Since September 1999, four general practitioners (GPs) have been working at the Comprehensive Cancer Centre North-Netherlands (IKN) as palliative care advisers who can be consulted by telephone by colleagues. In this clinical lesson, we’d like to discuss two patients whose nausea and vomiting at home was reduced through this consultation.

Patient A was a 46-year-old man with untreatable vomiting (10 times/24 hrs; brown, faecal fluid) who actually wanted to end his life because of these symptoms. Surgical intervention for his ileus was not possible. The patient did not want a nasogastric tube. The GP consulted the GP adviser.

Eight months before, the patient was found to have a Klatskin tumour (carcinoma of the bile duct) with peritonitis carcinomatosa. Because of an icterus, an endoprothesis was placed in the ductus choledochus. After 6 months the patient had developed an ileus, for which a gastroenterostomy was made. There had been ascites for several weeks; paracentesis was done in the hospital to remove fluids. Medication was sufentanil via the Port-A-Cath-system and paracetamol suppositories as needed for pain; domperidon suppositories and ondansetron for nausea; oral intake of magnesium-hydroxide/
aluminium-hydroxide suspension; omeprazol by infusion; triamterene for the ascites and temazepam as a sedative. The GP estimated the patient's prognosis at several weeks. Patient was at home, completely bedridden, and was being cared for by his wife. They had two children aged 7 and 10. The home-care agency provided help with the intravenous pain management.

The consultant's advice was: stop domperidon, ondansetron, magnesium-hydroxide/aluminium-hydroxide, temazepam and triamterene; start parenteral administration of haloperidol (5 mg per 24 h) in combination with dexamethasone (7.5 mg per 24 h) and start octreotide at a dosage of 50 µg b.d. or t.d.s, to be doubled until the desired effect is reached. This caused the vomiting to stop. Since it made the patient drowsy, the haloperidol dosage was halved the following day.

Two weeks later the GP asked for a suggestion for a sedative. The patient's condition was deteriorating but the pain was bearable. The decision was taken to add midazolam to the medication.

The patient died peacefully at home several days later.

In his written evaluation several weeks afterwards, the GP indicated that he had followed the advices given and that in his opinion they had improved the quality of the palliative care.

Patient B was a 12-year-old boy with a relapse of a primitive neuro-ectodermal brain tumour. On advice of the neurologist, the GP had given him a fentanyl patch for headache and ondansetron for nausea.

Patient had come home from hospital one month before; there were no more possibilities for palliative tumour treatment. Patient used tramadol drops 17.5 mg q.d.s and metoclopramide. The symptoms were probably caused by increasing intracranial pressure.

One day after the treatment with the patch had begun, the boy lay dozy in bed; he was no longer drinking or urinating. The headache and nausea were unbearable. The GP wanted advice about treating these symptoms and about possible catheterisation. It was not clear whether there was urinary retention. The abrupt deterioration of the boy's condition was not anticipated. In the GP's opinion, the family still needed an opportunity to complete the patient's last phase of life with him.

The consultant's advice was as follows: remove the patch, administer dexamethasone 7.5 mg subcutaneously and lower the dosage after 3 days. Switch (after 18 h) to morphine 24 mg and haloperidol 2 mg per 24 h via subcutaneous drip with extra dosage pump (also known as a 'Continuous Administration of Drugs – Patient Controlled Analgesia or CAD-PCA pump, this was a pre-set pump which could be used by the patient, a volunteer care giver or a parent to administer an additional dose; the dosage and maximum frequency are also preset). The patient urinated spontaneously the next morning and by afternoon had improved enough to be present at a special gathering at school.
After his headache worsened again 14 days later, the dexamethasone dosage was increased. When necessary, the parents administered an extra dose of subcutaneous medications using the button on the pump.

During the second telephone consultation there was a discussion of what to do in the event of agitation due to further deterioration and the wish for terminal sedation. A week later, midazolam (15 mg per 24 h) was added to the medication through a second subcutaneous drip with dosage pump. The GP doubled the dosage of morphine; haloperidol was raised to 3 mg per 24 h. After 2 days another similar increase was made. Midazolam (5 mg/ml) was on hand for any convulsions (10-20 drops on the cheek lining).

Four weeks after the first advice, the boy died peacefully at home. The GP was positive in his evaluation. His remark ‘I was very happy for the clear recommendations, the support for this patient was perfect’ demonstrates his opinion that the quality of palliative care had increased.

In patient A, intestinal obstruction played a part in his nausea, possibly aggravated by the ascites and the use of the opiate. A feeding tube gives some patients nausea and limits their movements and their being touched. It is not always necessary to use one with a bowel obstruction; production of gastrointestinal fluid can be successfully inhibited with medications.(1) One-time evacuation can give much relief in the event of stasis of a large quantity of stomach fluid; this can usually be done by home-care nurses. Haloperidol, which works on the vomiting centre and chemoreceptor trigger zone in the medulla oblongata, proved to relieve the nausea at a dosage of 2.5 mg. Dexamethasone was recommended for its anti-emetic effect (it is not known how it works) and because this may have a favourable influence on the ascites, the obstruction and general well-being. Octreotide reduced the production of fluid in the intestine. Another possibility to relieve pain from intestinal cramping would be butyl scopolamine, and the two may be combined.(2) Paracentesis could have been performed at home as well.

For patient B, increased intracranial pressure played a role in headache and vomiting. Oral medication was no longer possible. The tramadol dosage of 17.5 mg q.d.s. corresponds to 14 mg of morphine per day. The patch administering 25µg fentanyl per hour (corresponding to 60-90 mg morphine per 24 h) meant a dosage 4-6 times as high, which probably caused an opiate intoxication. Dexamethasone was able to reduce the headache, probably through reduction of intracranial pressure. Morphine was given subcutaneously at a slightly higher dose than that equivalent with the previous tramadol dosage. Nausea from increased intracranial pressure is often treated successfully with a low dose of haloperidol (1-2 mg, max. 5 mg).

Ondansetron has little or no effect on this kind of nausea; it does however have a clear place in the treatment of nausea caused by chemotherapy and radiotherapy. An advantage of a subcutaneous infusion using a pump with
extra-dose button is that if complaints worsen a pre-set extra dose can be given by the patient or a caregiver. This gives the people involved more control over the situation. If midazolam is used in terminal sedation, it is often necessary to use gradually increased doses.(3)

Nausea and vomiting
After pain, nausea and vomiting are the most common symptoms in the palliative phase; 40-70% of these patients experience them.(4,5) Like pain, these symptoms often lead to the GP adviser being consulted by GPs. In 2 years, the 4 advisers have had 408 consultations in the northern Netherlands; in 95 of them, nausea and vomiting were a relevant problem.(6) This symptom may not be identified if no one asks explicitly if the patient is bothered by nausea. It may result in the patient being quiet and withdrawn, and actually not indicating why, out of fear of having to vomit.(7) For some patients, these symptoms are worse than the pain.

Continuous subcutaneous infusion is a valuable method for administering medications (see table 5.1). Good palliative care can be achieved using relatively low doses of medications and without burden on patient and caregivers. Giving medications at fixed times is no longer necessary, a subcutaneous administration means more stable blood levels and paresis of the stomach and resorption problems no longer play a part. The use of suppositories is by no means always possible: sometimes too many different medications must be administered, sometimes the patient has painful hemorrhoids, for some the suppository is culturally unacceptable, and the effect can be unreliable due to variable resorption. In some cases the sublingual route (for a short time) can be an alternative.

To arrive at a treatment strategy, the probable cause of the nausea must be determined. Table 5.2 lists various causes of nausea with the involved neuroreceptors to consider in the choise of treatment.(8) There are several guidelines for treating nausea and vomiting in patients in the palliative phase.(9-11) They should enable the physician to choose a therapy that fits best to that patient or situation.

Consultation
A GP advisor -without seeing the patient himself- can give a useful advice when a colleague asks for consultation. The situation the GP is bringing up is nearly always complex; it involves psychosocial and other aspects in addition to physical symptoms. Clarifying the colleague's question and the patient's situation are highly important. The conversations last from 5 to 30 minutes. An important consideration in deciding wheather or not to ask for advice is the time involved in obtaining an advice. It is thus an advantage that the GP advisors of the CCCN can be reached directly. The advisers keep their knowledge and skills up to date by, among other things, consulting with fellow advisors and if necessary, with a team of 'superspecialists' present in the background.
Ladies and Gentlemen, many GPs ask for advice at a late phase in the illness, sometimes too late. For a third of the advices, the patient was estimated to have only days to live. The quality of palliative care could maybe further improve if patients with special problems can be discussed by a multi-disciplinary team, which would enable the expected problems to be anticipated. Such teams, set up by hospital or by region, can maybe play an important part in continuity of care. However, unexpected complications, at home or other locations, will not always be avoidable.
<table>
<thead>
<tr>
<th>cause</th>
<th>location</th>
<th>neurotransmitter or-receptor</th>
<th>therapy</th>
</tr>
</thead>
<tbody>
<tr>
<td>psychosocial stimuli (anxiety)</td>
<td>cerebral cortex</td>
<td>GABA, possibly SHT</td>
<td>benzodiazepines (lorazepam), cannabis psychotherapy</td>
</tr>
<tr>
<td>increased intracranial pressure, pain, odours, tastes</td>
<td>unknown limbic system</td>
<td>unknown</td>
<td>dexamethasone</td>
</tr>
<tr>
<td>dizziness, balance problems</td>
<td>vestibular system</td>
<td>acetylcholine, histamine-1</td>
<td>scopolamine, cyclizine</td>
</tr>
<tr>
<td>medications (opiates, digoxine)</td>
<td>chemoreceptor-trigger zone (outside blood-brain barrier)</td>
<td>dopamine-2</td>
<td>haloperidol, metoclopramide, domperidon</td>
</tr>
<tr>
<td>uraemia, hypercalcaemia, chemotherapy</td>
<td>SHT₃</td>
<td></td>
<td>ondansetron, granisetron, tropisetron</td>
</tr>
<tr>
<td>visceral pain, irritation chemotherapy, radiotherapy, frequently recurring obstruction</td>
<td>abdominal organs</td>
<td>anti-inflammatory SHT₃</td>
<td>dexamethasone, ondansetron, granisetron, tropisetron</td>
</tr>
<tr>
<td>direct stimulation from feeding tube</td>
<td>pharynx</td>
<td>--</td>
<td>remove tube</td>
</tr>
<tr>
<td>all above causes (activating the vomiting centre)</td>
<td>vomiting centre in brain stem (inside blood-brain barrier)</td>
<td>SHT₃, acetylcholine, histamine-1, dopamine-2</td>
<td>levomepromazine, scopolaminebutyl, prochlorperazine, cyclizine, phenothiazine derivatives, haloperidol, metoclopramide, domperidon</td>
</tr>
</tbody>
</table>

GABA = _-aminobutyric acid; SHT = 5-hydroxytryptamine (serotonin).

Table 5.2 Nausea and vomiting: key points for palliative therapy in palliative care

H.H. Vermaas-Westerhof, dr. A. Nijland and E. Kooij, GPs, contributed to this article. C. Rolf, PE. Cost Budde and dr K.W. Schuit provided commentary on an earlier version of this article.
Literature

Summary

Van Heest F, Finlay I, Otter R, Meyboom-de Jong B. General-practitioner palliative care advisers provide telephone support to fellow GPs


Many patients with a chronic illness spend the last phase of their lives at home. These patients are dependent on their GP for palliative care. In the north of the Netherlands, for the last four years an experiment has taken place with a new form of support in this type of care. The project offered GPs providing palliative care the opportunity to ask advice from four GPs specifically trained in this area.

This study evaluates the results. In the course of the project, which ran from 2000 to 2003, the number of requests for advice rose continuously. In total, the GP advisers gave 1385 recommendations over the telephone, of which 10% were outside of office hours. The requests often came shortly before the patient died (with a prognosis of days or weeks) and the majority involved combating of physical symptoms, although other problems often surfaced during the conversations. The GPs found the advice valuable, following 85% of the recommendations. Thus this form of support seems to mesh well with the needs of the GP.