Can high dose loperamide be used to reduce stoma output?

Prepared by UK Medicines Information (UKMi) pharmacists for NHS healthcare professionals

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Background

Some patients with a stoma resulting from an ileostomy, jejunostomy or a colostomy, can experience high-volume liquid stoma output. This can be problematic for a variety of reasons (e.g. leakage or metabolic disturbances may occur) (1). Several pharmacological and non-pharmacological methods have been employed to alleviate these problems.

Loperamide is a synthetic opioid agonist, which exerts its antimotility effects partly by stimulating μ (mu) opioid receptors on the circular and longitudinal muscle in the small intestine (2). Loperamide has been used in the management of colostomies or ileostomies, to reduce the volume of discharge (3) and is preferred to opiate drugs (for example, codeine phosphate) as it is not sedative, addictive, and does not cause fat malabsorption (4). In a small double-blind crossover study (n=10) in patients with ileostomy diarrhoea, loperamide 4mg three times daily was compared to codeine phosphate 60mg three times daily. The results suggest that loperamide may be more effective than codeine phosphate at reducing daily losses of sodium and chloride and may be associated with fewer side effects, but the study was very small (1). It has been suggested that the effect of both drug treatments may be additive (4).

The manufacturer of Imodium® (loperamide) states that the Summaries of Product Characteristics (SPCs) for the Imodium® range make no mention of use of the products to reduce stoma output or discharge volume. Therefore the use of Imodium® for this indication would be an off-license use, and a clinical decision by the treating physician (5).

However, anecdotal reports suggest that loperamide, in high doses, may be beneficial for patients with, for example, short bowel syndrome.

Answer

Published information regarding the use of high dose loperamide for this indication is scarce, with no recent (or randomised controlled) trials in this area. Therefore treatment of patients remains largely empiric (2) i.e. based on observation and experiment rather than evidence.

Loperamide passes through the enterohepatic circulation, which is severely disrupted in patients with a short bowel, so small bowel transit may be very rapid. Thus guidelines on the management of patients with a high output jejunostomy or ileostomy suggest that high doses of loperamide e.g. 12-24mg at a time may be needed (4). A dose of loperamide of 16-64mg/day has been suggested as part of an antisecretory drug regimen for patients with short bowel syndrome (6). Administration of loperamide 30 minutes before food slows gastrointestinal transit and allows more time for absorption (7).

Dosing information in this Medicines Q&A is largely based on practical experience from centres specialising in this area. High doses of loperamide are used to reduce high-volume stoma output at these centres. For reduction of motility in adult patients with short bowel syndrome, loperamide may be started at a dose of 2mg four times a day, typically 30 minutes before meals, and slowly titrated up to a maximum dose of 64mg daily (8,9). The dose required will depend on the volume of stomal loss and should be increased by 2mg until the desired consistency of the stomal loss is reached (9). If high doses are required, consensus suggests that it is worth trying loperamide oro-dispersible tablets, which can be better absorbed (8).
At one of these specialist centres the starting dose of loperamide depends on the volume of the baseline stoma output, e.g. 8mg-10mg four times daily for a very high output, and is then titrated according to response usually up to a maximum dose of 16mg four times daily. The highest loperamide dose used rarely in practice seems to be up to 24mg four times daily in particularly resistant cases (10).

These doses exceed the maximum loperamide doses stipulated in the Summaries of Product Characteristics (SPCs) (11-13) and the use of high dose loperamide would therefore be the responsibility of the prescriber.

Summary

♦ The use of high doses of loperamide may be warranted in patients who require pharmacological intervention to reduce high-volume stoma output.
♦ Administration of loperamide 30 minutes before food slows gastrointestinal transit and allows more time for absorption (7).
♦ Depending on baseline volume of stoma output, a starting dose of 2-10mg four times a day of loperamide may be prescribed and titrated according to individual response (8,9,10).
♦ Specialist centres usually use a maximum total daily dose of 64mg of loperamide (6,8,9).
♦ The highest dose used rarely in practice seems to be 24mg four times daily, to reduce stoma output in resistant cases (10) i.e. maximum total daily dose of 96mg.
♦ This information is however based on practical experience and does not conform to the maximum dose stipulated in the loperamide Summaries of Product Characteristics (SPCs) (11-13). The use of high dose loperamide would therefore be the responsibility of the prescriber.

Limitations

• There is a lack of published information on the use of high dose loperamide for reducing volume of stoma output.
• Further research is required to determine suitable dose ranges for this indication.
• Studies on the use of loperamide in children have been excluded.

References

5. Personal communication. Medical Information. Professional Information Ltd for Johnson & Johnson Ltd. 19th September 2013.
10. Personal communication with Specialist Pharmacist, St. Mark’s Hospital, Harrow 1st October 2013.


Quality Assurance

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Search strategy

- Embase via NICE Evidence Search:
  - (exp loperamide/ AND exp drug megadose/) AND (exp short bowel syndrome/ OR exp stoma/ OR exp ileostomy/ OR exp colostomy/ OR exp enterostomy/).
  - [exp loperamide/ AND (high AND dose).af] AND (exp short bowel syndrome/ OR exp stoma/ OR exp ileostomy/ OR exp colostomy/ OR exp enterostomy/).
  - [exp loperamide/ AND (high ADJ dose).af] AND (exp short bowel syndrome/ OR exp stoma/ OR exp ileostomy/ OR exp colostomy/ OR exp enterostomy/).
- Medline via NICE Evidence Search:
  - [exp loperamide/ AND (high AND dose).af] Limits LG=EN and H=Y.
  - [exp loperamide/ AND (exp peritoneal stomata/ OR exp ileostomy/ OR exp colostomy/)]. Limits LG=EN and H=Y.
  - exp loperamide/ AND (exp surgical stomas/ OR exp enterostomy/ OR exp short bowel syndrome/). Limits LG=EN and H=Y.
  - [exp loperamide/ AND (high ADJ dose).af]. Limits LG=EN and H=Y.
- British Nursing Index (BNI) accessed via NICE Evidence Search:
  - exp stoma care/ AND exp drug therapy/
  - exp stoma care/ AND exp gastrointestinal system and disorders/
  - exp stoma care/ AND loperamide.af
- CINAHL (comprehensive information for nurses and allied health professionals) accessed via NICE Evidence Search:
  - exp ostomy care/ AND exp diarrhea/
  - exp ostomy care AND loperamide.af
• SIGN website. Accessed via http://www.sign.ac.uk/
• EGuidelines. Accessed via http://www.eguidelines.co.uk
• Royal College of Surgeons website. Accessed via http://www.rcseng.ac.uk/
• Electronic medicines compendium (eMC). Accessed via http://www.medicines.org.uk/emc/
• Martindale. Accessed via http://www.medicinescomplete.com
• AHFS. Accessed via http://www.medicinescomplete.com
• BNF. Accessed via http://bnf.org/
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• Clinical expert - Pharmacy Manager, St. Mark’s Hospital, Harrow 14th July 2011 and Specialist Pharmacist, St Mark’s Hospital, Harrow 1st October 2013.