Ranitidine Subcutaneous - Palliative Care (Adults)

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1. Overview

Purpose

This protocol outlines the administration, prescribing and monitoring of ranitidine at Waitemata District Health Board.

Scope

All medical and nursing staff

⚠ This guideline is for use in Palliative Care ONLY.

Note: PPIs are considered the medications of choice for prophylaxis or treatment of NSAID induced gastrointestinal damage.[1]

2. Presentation

Ranitidine (e.g. Zantac®) 50mg in 2ml ampoules (25mg/ml)

- Ranitidine injection is a clear, colourless to pale yellow liquid

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3. Indications

Licensed:

- Dyspepsia, gastric and duodenal ulceration, reflux oesophagitis, prophylaxis of stress ulceration[2, 3]

Unlicensed:

- Itch[1]

Unlicensed route of administration:

- Subcutaneous use
  - There is a lack of evidence supporting the use of subcutaneous ranitidine but it is widely used in some centres with good effect[4]
  - Subcutaneous ranitidine is useful when a patient cannot take oral medication and the intra-venous route is not appropriate

4. Mechanism of Action

Ranitidine inhibits histamine at H2-receptors of the gastro-parietal cells which inhibits gastric acid secretion.[5]
Itch is thought to be alleviated through the anti-histamine action.

5. Dose

Recommended starting dose:

- **50mg SC three times a day** or **150mg to 200mg over 24 hours** subcutaneously via syringe driver

6. Administration

6.1 Diluent

- For subcutaneous administration ranitidine does not need to be diluted
- When added to a syringe driver the recommended diluent is water for injection[4]
  - Ranitidine should be **added last** to an already dilute combination of drugs in order to reduce the risk of precipitation

6.2 Additional Equipment

- Subcutaneous Saf-T-intima single lumen ADM140 (*refer WDHB Policy Palliative Care- Subcutaneous Site Selection, Insertion and Monitoring of BD Saf-T-Intima Cannula*)
- Continuous subcutaneous infusion pump (Niki T34) if required

6.3 Compatibility

Compatible with:

- Water for injection, 0.9% sodium chloride, oxycodone, glycopyrronium,[6] morphine[7]

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Limited evidence of compatibility-discuss with Palliative Care Team:

- Compatibility with fentanyl and hyoscine butylbromide in 0.9% NaCl has been reported [4, 6]
- Limited clinical experience suggests compatible with haloperidol, methadone, metoclopramide and octreotide[4]

Concentration-dependant *incompatibility* with:

- Levomepromazine

Incompatible with:

- Midazolam

⚠ Do not use if the solution is cloudy or a precipitate is present.

6.4 Administration Procedure

- Should be injected through a Saf-T- Intima (butterfly) or directly via subcutaneous needle
- The Saf-T-Intima should be flushed with 0.2ml of water for injection after administration of medication
- Can be administered via a continuous subcutaneous infusion pump (Niki T34)

7. Observations and Monitoring

- Monitor the infusion site for any skin reactions

8. Contraindications and Precautions

Contraindications

Hypersensitivity to ranitidine[2]

Precautions

Hepatic impairment
Renal impairment[2, 4]

9. Possible Adverse Effects

- Diarrhoea and other gastrointestinal disturbances
- Headache
- Altered liver function tests
- Dizziness
- Thrombocytopenia, leucopenia
- Rash
- Bradycardia / AV block
- Blurred vision[2]

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10. Drug Interactions

May increase plasma concentrations of:

Triazolam, midazolam, glipizide[2]

Reduces plasma concentration of:

Erlotinib - give at least 2 hours before or 10 hours after ranitidine[3]

May reduce absorption of:

Ketoconazole, atazanavir, itraconazole[2]

Possible interaction with:

Warfarin – monitor INR[2]

11. References

1	MacLeod R, Vella-Brincat J, MacLeod A, The Palliative Care Handbook 6th edition 2012, Soar Printers. http://www.hospice.org.nz/cms_show_download.php?id=377
2	Medsafe Website – Ranitidine Datasheet http://www.medsafe.govt.nz/profs/datasheet/z/Zantacinj.pdf [cited 28/4/2016]
3	New Zealand Formulary online, release 46-1 April 2016 – Ranitidine monograph. http://nzf.org.nz [cited 28/4/2016]
4	Twycross R, Wilcock A, Howard P (eds). Palliative Care Formulary Online edition – H2-receptor antagonists monograph and Compatibility charts. http://www.palliativedrugs.com [cited 28/4/2016]
5	Lacy CF, Armstrong LL, Goldman MP, Lance, LL. Drug Information Handbook. 13th Edition (2005); Lexi-comp Publishing, USA.
6	Dickman A, Schneider J. The Syringe Driver – Continuous subcutaneous infusions in palliative care. 3rd ed. New York: Oxford university press; 2011.
7	Trissel, L. Handbook on Injectable Drugs 14th Edition 2007. American Society of Health-System Pharmacists Inc. Bethesda Maryland.