1. Overview

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

Scope
All medical and nursing staff

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
Ranitidine Subcutaneous - Palliative Care (Adults)

3. Indications

Licensed:
- Dyspepsia, gastric and duodenal ulceration, reflux oesophagitis, prophylaxis of stress ulceration

Unlicensed:
- Itch

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
  - Subcutaneous ranitidine is useful when a patient cannot take oral medication and the intravenous route is not appropriate

4. Mechanism of Action

Ranitidine inhibits histamine at H2-receptors of the gastro-parietal cells which inhibits gastric acid secretion. 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
  - 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, morphine
Ranitidine Subcutaneous - Palliative Care (Adults)

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\(^2\)
Ranitidine Subcutaneous - Palliative Care (Adults)

10. Drug Interactions

May increase plasma concentrations of:
Triazolam, midazolam, glipizide

Reduces plasma concentration of:
Erlotinib - give at least 2 hours before or 10 hours after ranitidine

May reduce absorption of:
Ketoconazole, atazanavir, itraconazole

Possible interaction with:
Warfarin – monitor INR

11. References


