Tertiary and Quaternary Committee

Intravenous Proton Pump Inhibitors (IV PPIs)

Background

Intravenous Proton Pump Inhibitors (PPIs) were previously approved by NEMLC for inclusion on the Tertiary/Quaternary EML for patients who are not able to use an oral PPI. At the NEMLC meeting of 24 June 2021, the Committee recommended the following:

> It is recommended that intravenous proton pump inhibitors be included on the Tertiary Essential Medicines List only for patients who are truly unable to take oral proton pump inhibitors enterally (either orally or through nasogastric tube). It is recommended that the proton pump inhibitors be included as a therapeutic class, with the most affordable agent procured. *(see table 1 below)*

This pragmatic recommendation was made for class of IV PPIs, however the members of this class and representative dosing was not established at the time. In preparation of the next injectable contract (HP06-2024), it has been requested that this IV PPI class be outlined, so that determination of appropriate specifications can be taken forward, and quantity estimates can be made.

Executive Summary

Date: March 2023
Medicine (INN): Intravenous Proton Pump Inhibitors (pantoprazole, omeprazole, esomeprazole)
Medicine (ATC): A02BC (A02BC02, A02BC01, A02BC05)
Indication (ICD10 code): For hospitalised patients requiring PPI therapy and are unable to take these orally or via nasogastric tube.
Patient population: As above
Level of Care: Tertiary and Quaternary, or high-care and intensive care wards in lower levels.
Prescriber Level: Specialist
Current standard of Care: Currently IV PPIs utilised as the standard of care

Table 1: Proton pump Inhibitors (IV) – current available IV products in South Africa Market

Available IV PPIs	
Esomeprazole	40mg vial
Omeprazole	40mg vial
Pantoprazole	40mg vial

Oral and IV PPI shown to have similar outcomes in management of various indications. A meta-analysis compared clinical outcomes of oral PPIs versus intravenous PPIs in patients with peptic ulcer disease. [1] The analysis included six prospective open label trials, evaluating a total of 615 patients (oral PPIs = 302, IV PPIs = 313). No significant difference was found between oral and IV PPIs with regard to recurrent bleeding (RR 0.92, 95% CL 0.56 -1.50), mean volume of blood transfused (-0.02 unit, 95% CL 0.29 – 0.24 unit), requirement of surgery (RR 0.82, 95% CI 0.19 – 3.61, and all-cause mortality (RR 0.88, 95% CI 0.29 – 2.71). Duration of hospital stay was significantly shortened in oral PPI group. [Limitations: small sample size (underpowered), lack of blinding (open-label studies)].

PPI dosing is indication specific, however most source indicate representative dosing.[Error! Bookmark not defined.,2] Clinical judgement and indication however need to be taken into consideration when considering dosing.

RECOMMENDATION

The Tertiary/Quaternary Expert Review Committee recommends that that the most affordable IV PPI be used for hospitalised patients requiring a PPI where an oral PPI formulation cannot be used.

Any of the available registered IV PPI formulations can be procured (esomeprazole 40mg, omeprazole 40mg or pantoprazole 40mg).

References

[1] Tsoi KK, Hirai HW, Sung JJ. Meta-analysis: comparison of oral vs. intravenous proton pump inhibitors in patients with peptic ulcer bleeding. Alimentary Pharmacology & Therapeutics. 2013, 38:721.

[2] National Institute for Health and Care Excellence. Gastro-oesophageal reflux disease and dyspepsia in adults: investigation and management. 2014. https://www.nice.org.uk/guidance/cg184/resources/gastrooesophageal-reflux-disease-and-dyspepsia-in-adults-investigation-and-management-pdf-35109812699845