Intravenous proton pump inhibitors

for gastric anti-secretory treatment when oral therapies are unsuitable

Technology Guidance from the MOH Drug Advisory Committee

Guidance recommendations

The Ministry of Health's Drug Advisory Committee has recommended:

✓ omeprazole 40 mg injection; and
✓ pantoprazole 40 mg injection

in line with their registered indications in Singapore for gastric anti-secretory treatment when oral therapies are unsuitable.

Subsidy status

Omeprazole 40 mg injection and pantoprazole 40 mg injection are recommended for inclusion on the MOH Standard Drug List (SDL) for the abovementioned indication.

SDL subsidy **does not** apply to esomeprazole 40 mg injection.

Published on 1 April 2020

Factors considered to inform the recommendations for subsidy

Technology evaluation

1.1 The MOH Drug Advisory Committee ("the Committee") considered the evidence presented for the technology evaluation of intravenous proton pump inhibitors (IV PPIs) for gastric anti-secretory treatment. The Agency for Care Effectiveness conducted the evaluation in consultation with clinical experts from public healthcare institutions. Published clinical and economic evidence for IV omeprazole, esomeprazole and pantoprazole was considered in line with their registered indications.

1.2 The evidence was used to inform the Committee's deliberations around four core decision-making criteria:

- Clinical need of patients and nature of the condition;
- Clinical effectiveness and safety of the technology;
- Cost-effectiveness (value for money) – the incremental benefit and cost of the technology compared to existing alternatives; and
- Estimated annual technology cost and the number of patients likely to benefit from the technology.

1.3 Additional factors, including social and value judgments, may also inform the Committee's subsidy considerations.

Clinical need

2.1 The Committee noted that PPIs are commonly used in local clinical practice as an alternative to histamine-2 receptor antagonists (H2RA) for treating gastroesophageal reflux disease, peptic ulcer disease, reflux esophagitis, Zollinger-Ellison syndrome and preventing NSAID-induced ulcers. Intravenous formulations are typically reserved for short-term use when oral therapies are not suitable such as for preventing peptic ulcer re-bleeding following haemostatic endoscopy and for stress ulcer prophylaxis in critically ill patients.

2.2 The Committee acknowledged that while cimetidine injection (an H2RA) for gastric anti-secretory treatment is listed on SDL, IV PPIs are not subsidised, representing a chemical gap in the MOH Standard Drug List.

Clinical effectiveness and safety

3.1 The Committee noted that the available systematic reviews showed PPIs (IV or oral formulations) significantly reduced re-bleeding and surgical intervention rates compared to H2RAs following haemostatic endoscopy of bleeding peptic ulcers. However, no significant difference in mortality between treatments was reported.

3.2 Similarly, PPIs significantly reduced upper gastrointestinal bleeds compared to H2RAs for stress ulcer prophylaxis. However, neither PPIs nor H2RAs led to a significant improvement in mortality compared with placebo.

3.3 Based on the approved dosing regimens, the Committee agreed that it was reasonable to consider all 3 IV PPIs to be equipotent on a per milligram basis.

3.4 The Committee acknowledged that IV PPIs are generally well-tolerated and all drugs within the class have a comparable safety profile.

Cost effectiveness

4.1 No published local cost-effectiveness studies of IV PPIs were identified. The Committee noted that generic formulations of IV PPIs are available and considered that, as a class, they are likely to be cost-effective compared with alternative treatments in view of their relatively low cost per treatment episode.

4.2 The Committee agreed that a cost-minimisation approach was appropriate to select the lowest priced IV PPI for subsidy consideration in view of their comparable efficacy and safety. It noted that the cost of generic omeprazole and pantoprazole injection was comparable, while the cost of esomeprazole injection was more than two-fold higher.

Estimated annual technology cost

5.1 The Committee noted that the annual cost impact was estimated to be less than SG$500,000 in the first year of listing omeprazole and pantoprazole injections on SDL.

Recommendation

6.1 Based on available evidence, the Committee recommended omeprazole 40 mg injection and pantoprazole 40 mg injection be listed on SDL for gastric anti-secretory treatment when oral therapies are unsuitable, in view of their comparable cost per treatment episode and acceptable clinical and cost effectiveness.

About the Agency

The Agency for Care Effectiveness (ACE) is the national health technology assessment agency in Singapore residing within the Ministry of Health. It conducts evaluations to inform the subsidy of treatments, and produces guidance on the appropriate use of treatments for public hospitals and institutions in Singapore. The guidance is based on the evidence available to the Committee as at 7 October 2019. This guidance is not, and should not be regarded as, a substitute for professional or medical advice. Please seek the advice of a qualified healthcare professional about any medical condition. The responsibility for making decisions appropriate to the circumstances of the individual patient remains with the healthcare professional.

Find out more about ACE at www.ace-hta.gov.sg/about

Principal Head (HTA)
Agency for Care Effectiveness
Email: ACE_HTA@moh.gov.sg