HELICOBACTER PYLORI

Background

Helicobacter pylori (Hp) is a gram negative GI infection generally acquired in childhood by the faecal-oral or oral-oral route. Clearly it has been around for a long time, but since its (re)-discovery by Warren and Marshall in 1983, it has revolutionised upper GI gastroenterology and they subsequently won the Nobel prize for medicine in 2005 (1,2). The WHO define this as a Grade 1 carcinogen (3,4). Helicobacter heilmanii is sometimes seen and is treated in the same way.

The prevalence of *H pylori* in childhood varies in different populations. Its prevalence in developed countries is much less than in less economically developed countries. In Scotland, as many as 40% of the population would be positive, but likely less than 20% of children would carry this bug. Peptic ulcer disease is usually due to Hp (and also Hp negative disease is seen) in children but more rarely than in adults.

New guidelines from ESPGHAN / NASPGHAN and CAG have reviewed the infection in children and have made recommendations (5,6), but within Scotland, the expert view is that test and treat is actually a pragmatic strategy in appropriate cases (7). In children it is mandatory to make sure we have eradicated the infection (this is different to adult practice where symptom resolution is relied on).

Who to test?

- Dyspepsia
- Nausea **/** Vomiting
- Localised epigastric pain
- Symptoms of peptic ulcer disease such as haematemesis or melaena* (please contact us direct about patients you are worried about or advise them to attend the ED department if at all unwell and in need of assessment)
- Pain pre-mealtime as gastric acid secretion rises in anticipation
- Pain that may improve with eating and drinking or taking an antacid medication

Nb. Pain associated with mealtimes/eating is often all that can be elicited by history in peptic ulcer disease, particularly in young children and may be more difficult to delineate.

- Test patients with a family history of gastric cancer if families raise this as a concern (ESPGHAN / NASPGHAN details low pickup but we feel this is a relevant indication).

- Consider testing for *H. pylori* in idiopathic refractory iron deficiency anaemia and also those with B12 deficiency and ITP (although the association is not strong, we feel it reasonable to consider) (8)

Symptomatic children should be tested with the aim of diagnosing a cause of specific symptoms rather than simply identifying *H. Pylori*

Who not to test?

Reflux is by far the commonest acid related problem we see.

Patients who clearly have just reflux symptoms probably should not be tested as Hp is unlikely to be the cause.

Testing in patients with classical functional abdominal pain is also not recommended.

How to test- Investigation for *H. Pylori*

Faecal antigen testing is specific and sensitive in the children's population. Faecal antigen testing is via Microbiology. This is performed in Microbiology at St John's. The turnaround is usually about a week.

A patient must NOT be on a PPI for two weeks and have not had antibiotics for at least 4 weeks as the test may be made falsely negative if within these timeframes.

Antacids like Gaviscon or Peptac will not affect the test and may be used to help symptoms.

Who to treat?

If you detect H pylori, you should get rid of it!

If tested and is found to be positive, we would recommend that eradication therapy is given and unless there are very good reasons, no endoscopy is required.

Treatment

Recommendation is triple therapy for 14 days, clearly dependent on any drug allergy issues

- Omeprazole, amoxicillin, clarithromycin (OAC) – this is first option unless drug allergy issues
- Omeprazole, amoxicillin, metronidazole (OAM)
- Omeprazole, clarithromycin, metronidazole (OCM)

Doses recommended are as per LJF (9).

https://www.ljf.scot.nhs.uk/LothianJointFormularies/Child/1.0/1.3/Pages/default.aspx

We usually give a further 6 weeks of PPI to help deal with any residual hyperacidity / symptoms.

What to do next – in children and YP, ensure eradication !

This is important in children and different to advice given by adult GI.

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What to do if you haven't eradicated?

Please contact our department for further advice. Second line treatments need to be considered and best that GI team are involved.

Second line (rescue) treatment

This would involve a switch to OAM for two weeks with no further testing

Other options such as sequential therapy or high dose amoxicillin and other bismuth or tetracycline based regimens (Ref 5, Recommendation 14) would need to be on discussion with the Paeds GI team.

The role of endoscopy?

Clearly an option for those not responding to appropriate empirical therapy is **endoscopy**, which would be done here at RHCYP, that would have to be after discussion and arranged via the GI service.

Endoscopy also allows us to culture for sensitivity testing in resistant cases.

References

1. Warren and Marshall https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(84)91816-6/fulltext
2. Nobel Organisation https://www.nobelprize.org/prizes/medicine/2005/press-release/
3. CRUK https://www.cancerresearchuk.org/about-cancer/causes-of-cancer/infections-eg-hpv-and-cancer/does-hpylori-cause-cancer
4. WHO and cancer risk https://www.ncbi.nlm.nih.gov/pubmed/12374879
5. ESPGHAN https://www.ncbi.nlm.nih.gov/pubmed/28541262
6. Canadian https://www.ncbi.nlm.nih.gov/pubmed/27102658
7. GGC H pylori guideline (courtesy Dr Richard Hansen)
8. Hp and haematological problems https://www.ncbi.nlm.nih.gov/pubmed/30994322
9. LJF https://www.ljf.scot.nhs.uk/LothianJointFormularies/Child/1.0/1.3/Pages/default.aspx

Peter Gillett

GI Consultant RHCYP August 2019