Diagnosis and management of gastroenterological infection in travellers and migrants

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HTD at RCGP
Sept 2013
What I’ll try to cover

What bugs to think about and in what context
What simple tests to do in primary care, when to refer.
What to make of lab results.
When to treat empirically
Treatment of travellers diarrhoea
“tantalising” data from my primary care study
Principles of infection & diarrhoea

Diarrhoea doesn’t always mean the focus is the gut

The full blood count has useful info: esp eosinophil count

Fever > 72 hours: refer for blood cultures etc

Lots of parasites are irrelevant

We often treat giardia presumptively

Don’t forget HIV
Expats, travellers

VFRs
A case…

55 Ghanaian ♂
3 days diarrhoea and fever, with rigors
No abdominal pain or PR blood

Return from 3 week trip to Ghana 48 hrs before symptom onset

O/E: T 38.2, pulse 110, normal BP, soft abdo
A case...

GP: Rx ciprofloxacin but....

What test (belatedly) gave the diagnosis?
Thin Film
A case...

30 Zimbabwean ♂ - last travel 8 years previously

8 weeks diarrhoea & wt loss

What test made the diagnosis?
ΔΔx

Cryptosporidiosis
Microsporidiosis
Isospora
Salmonella/Shigella/Campylobacter

ALL – opportunistic infections due to advanced HIV disease
Travellers Diarrhoea

- 50% resolve within 48 hrs - so presents within country or within 1st week post-travel
- 50% no diagnosis made (E coli, viruses)
- Investigate in primary care??
- Antibiotics beneficial in shortening duration

- Ciprofloxacin 750mg stat or 500mg bd 3 days
- S Asia: Azithromycin 1g stat or 500mg 3 days
Traveller

3/52 diarrhoea, bloating, nausea
No blood

Returned from 6 week trip to India

Investigated in Delhi, 5 days after symptom onset. Stool: “amoebiasis”

Given 1 week of Flagyl with temporary response, but relapse of symptoms a few days after completing treatment

Diagnosis?
Giardia

Δx stool microscopy “for O, C & P”
Duodenal biopsy

Rx metronidazole 400mg tds 7 days
tinidazole 2g
Geographic, symptomatic and laboratory predictors of parasitic and bacterial causes of diarrhoea in travellers

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ABSTRACT
An observational study of patients presenting with diarrhoea to a walk-in service for returning travellers was conducted with the aim of identifying features that would help predict whether pathogens were bacterial or parasitic. In total, 509 cases were included, of which a bacterial aetiology was found in 55/440 (12.5%) and a parasitic cause in 51/428 (11.9%). Patients with symptoms of ≤14 days were significantly more likely to have a bacterial diag-
HTD emergency walk-in service

2500 visits per annum
18% local; 20% outside London
### Table 2
Results of bacterial culture and microscopy for parasites from 509 patient stools

<table>
<thead>
<tr>
<th></th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bacteria</strong></td>
<td></td>
</tr>
<tr>
<td>Negative</td>
<td>385</td>
</tr>
<tr>
<td>No sample</td>
<td>69</td>
</tr>
<tr>
<td><em>Aeromonas</em></td>
<td>1</td>
</tr>
<tr>
<td><em>Campylobacter</em></td>
<td>17</td>
</tr>
<tr>
<td><em>Plesiomonas</em></td>
<td>2</td>
</tr>
<tr>
<td><em>Salmonella</em></td>
<td>13</td>
</tr>
<tr>
<td><em>Salmonella Typhi</em></td>
<td>1</td>
</tr>
<tr>
<td><em>Shigella</em></td>
<td>18</td>
</tr>
<tr>
<td><em>Vibrio</em></td>
<td>1</td>
</tr>
<tr>
<td>Multiple organisms</td>
<td>2</td>
</tr>
<tr>
<td><strong>Parasite</strong></td>
<td></td>
</tr>
<tr>
<td>Negative</td>
<td>377</td>
</tr>
<tr>
<td>No sample</td>
<td>81</td>
</tr>
<tr>
<td><em>Cryptosporidium</em></td>
<td>2</td>
</tr>
<tr>
<td><em>Cyclospora</em></td>
<td>8</td>
</tr>
<tr>
<td><em>Entamoeba histolytica</em></td>
<td>4</td>
</tr>
<tr>
<td><em>Giardia lamblia</em></td>
<td>35</td>
</tr>
<tr>
<td><em>Isospora</em></td>
<td>1</td>
</tr>
<tr>
<td><em>Schistosoma mansoni</em></td>
<td>1</td>
</tr>
</tbody>
</table>
HTD data

- Stool pathogen detected in 13% patients attending walk-in with diarrhoea

- The longer the history, the less likely a bacterial cause

- 75% patients with bacterial cause had raised CRP

- 55% patients with bacterial cause had a fever

- Formed stools just as likely to be positive
Non-pathogenic parasites commonly reported in stool samples

Entamoeba histolytica/dispar
Entamoeba coli
Entamoeba hartmani
Blastocystis hominis
Balantidium coli
Dientamoeba fragilis
= Dirty water!
Amoebic colitis – this patient took ++ Immodium and perforated!
Enteric Fever – more constipation than diarrhoea

Diagnosis requires blood cultures – S Asia: fever > 72 hrs, refer.

Ciprofloxacin won’t work!
Parasites and nonspecific GI symptoms in migrants
Strongyloidiasis – country of origin

- Caribbean: 20%
- South America: 3%
- Africa: 48%
- Asia: 34%
Diagnoses at HTD among patients with eosinophilia

- Schistosomiasis: 40%
- Strongyloides: 31%
- Gut helminths: 12%
- Other helminths: 5%
- Loa loa: 3%
- Onchocerciasis: 5%
- Mansonella: 2%
- Other filaria: 1%
- Other: 5%
## Diagnosis

<table>
<thead>
<tr>
<th>Test</th>
<th>Travellers %</th>
<th>Migrants %</th>
<th>Sig (2P)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Detectable larvae*</td>
<td>67</td>
<td>46</td>
<td>0.005</td>
</tr>
<tr>
<td>Eosinophilia</td>
<td>78</td>
<td>77</td>
<td>0.85</td>
</tr>
<tr>
<td>Positive serology + detectable larvae</td>
<td>73</td>
<td>98</td>
<td>0.001</td>
</tr>
<tr>
<td>Positive serology</td>
<td>84</td>
<td>99</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

*stool microscopy or charcoal culture positive
Treatment

- Albendazole 400mg bd 3 days
  - £14
  - 75% cure

- Ivermectin 200μg/kg stat dose
  - £18 per 60kg
  - 85-90% cure

- Ivermectin 200μg/kg x 2 doses
  - 95% cure
Potential outcome of untreated Strongyloides
disease:

- severe diarrhoea
- bowel obstruction
- bacteraemia with gram negative sepsis

in patients receiving steroids or chemotherapy or with HTLV-1
Strongyloides & GI sx


- Abdominal pain, indigestion, heartburn, diarrhoea, bloating
  - Often mild, sometimes more severe
  - albeit inconclusive associations for all these symptoms
  - [41% HTD cases {Sudarshi et al}]
Infectious Diseases SpR in general GI OPD
Oct 04-Sept 05

8 immigrants from Africa/Asia with eosinophilia
→ 5 *Strongyloides* serology positive

Rx ivermectin 200μg/kg stat dose

?resolution of eosinophilia  ?symptoms.
Eosinophilia audit in UCLH GI clinic

- Migrants were over-represented among those with persistent eosinophilia.
- Patients were not appropriately investigated for helminth infection.
- Multiple OPD attendances with endoscopic and radiological investigations were performed.
- 40% migrants with eosinophilia had helminth infections – with resolution of eos & symptoms after treatment

  – Smith et al. Frontline Gastroenterology 2011
Strongyloides in E London

? Prevalence in migrants (>70% in SE Asians in Canada)
Strongyloides in an E London primary care setting - a study
Research questions

• What is prevalence of Strongyloides among Bangladeshi migrants in London?
• Is infection restricted to certain age groups?
• Does eosinophilia have predictive value for Strongyloides in this setting?
• Is infection associated with GI morbidity?
  – and so reduce referrals to 2^o care
Inclusion criteria

• All patients with eosinophilia
• All patients with unexplained GI sx
• Phlebotomy controls

Protocol

• 5mls blood for FBC & Strongy serology
• Brief questionnaire on travel history/GI symptoms
• Collate with GP data on prescribing & demographics
GI Questionnaire

Patient Information
1. a) Age: ________
   b) Sex: M / F

2. Country of Origin: ________
   When did you first move to the ________

3. When did you last travel to travel! ________

Gastro-Intestinal Symptom Score

All questions are with reference to the ________

EXAMPLE
How severe is your pain?

1. ________ 2. ________ 3. ________ 4. ________
   a) No pain  b) Mild pain  c) Moderate pain  d) Severe pain

1. Do you currently suffer ________
   a) If yes, is the pain main ________

i) Indigestion / Heart burn / Regurgitation.
   If yes, how long for? ________
   a) Not at all
   b) Less than once a month
   c) Between once a month and once a week
   d) More than once a week
   e) At least once a day

i) Diarrhoea / Loose stool:
   If yes, how long for? ________
   a) Not at all
   b) Less than once a month
   c) Between once a month and once a week
   d) More than once a week
   e) At least once a day

i) Constipation:
   If yes, how long for? ________
   a) Not at all
   b) Less than once a month
   c) Between once a month and once a week
   d) More than once a week
   e) At least once a day

f) Wind (Burping or flatulence that is troubling to you): If yes, how long for? ________
   a) Not at all
   b) Less than once a month
   c) Between once a month and once a week
   d) More than once a week
Preliminary Results

Aug 2011 – Aug 2012:

- 410 patients recruited
  - Eos 55%
  - GI 41%
  - Both 5%

- Male 50%
- 85% from Bangladesh
Preliminary Results

<table>
<thead>
<tr>
<th></th>
<th>Positive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eosinophilia</td>
<td>33%</td>
</tr>
<tr>
<td>GI symptoms</td>
<td>18%</td>
</tr>
<tr>
<td>FBC controls</td>
<td>15%</td>
</tr>
</tbody>
</table>

...further analysis of GI questionnaires pre- and post-treatment
Sources of information

- British Infection Society/HTD guideline
  - “fever + GI symptoms”

- HPA website – Migrant Health Guide

- NATHNAC website – travellers diarrhoea

- Hospital for Tropical Diseases for urgent or routine assessment or telephone advice

- HTD SpR/consultant mobile 07908250924

- See UCLH website or www.thehtd.org