Overuse of Acid Suppression Therapy in Hospitalized Patient

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Background

• Acid suppression therapy (AST) is commonly prescribed therapy
• Its minimum side effects and easy availability (OTC) inspire physicians to prescribe it frequently prophylactically as well as routinely in almost all cases of abdominal pain.
• This significantly increases cost of treatment as well as subjects patients to increased risk of drug interactions.
• Data is limited in our settings regarding the frequencies of AST overuse in hospitalized patients.
AIM

• To determine the proportion of AST overuse in hospitalized patients of Medicine and Nephrology departments of CMCH.
Materials and Methods

- Descriptive cross sectional study
- Time period- May 2009 to October 2010
- Place of study- Medicine(3 units) and Nephrology department of CMCH,
- Inclusion criteria- Who take PPI or H2 blockers irrespective of Endoscopy and gave written consents for enrollments were included.
- The patients taking AST before admission were excluded.
Materials and methods cont....

- Structured Case record forms were prepared containing demographic variables (age and sex), Steroid and NSAID uses, Smoking Habit, Primary diagnosis, Types of AST therapy and endoscopic findings.
- Sampling was purposive.
Results

- Total no of patients: 622
  Medicine: 524
  Nephrology: 98
Grouping according to age

![Bar chart showing age groupings with minimum and maximum values for each group.]

- **gr-1**: Minimum 15, Maximum 30
- **gr-2**: Minimum 31, Maximum 45
- **gr-3**: Minimum 46, Maximum 60
- **gr-4**: Minimum 61, Maximum 90

Legend:
- **Light Blue**: minimum
- **Dark Blue**: maximum
Mean age of different groups

gr-1, 24
gr-2, 38
gr-3, 53
gr-4, 70

0 20 40 60 80

gr-1 gr-2 gr-3 gr-4

Medicine

nephrology
Number of patients in different groups (N:Med=524;Neph=98)
Male: Female ratio (N: Med=524; Neph=98)

[194] Medicine

[330] Male
Female

[34] Nephrology

[64] Male
female
PPI, H2B, (N: Med=524; Neph=98)

- PPI: (89%)
- H2B: (92%), (11%), (8%)

(N: Med=524; Neph=98)
PPI vs H2B (medicine) (N=524)
PPI vs H2B (nephrology) (N=98)
Normal endoscopy- (Med:175(51.5%), Neph:60(72%))  
(Total no of endoscopy done  
Med=340,Neph=83)
Abnormal endoscopy (Med: 165 (48.5%), Neph: 23 (28%))
(Total no of endoscopy done: Med = 340, Neph = 83)
NSAID and Steroid Use (N: Med=340; Neph=83)

- NSAID: 53 (16%) Med, 36 (11%) Neph, 16 (8%) Med, 7 (8%) Neph
- Steroid: 11 (19%) Med, 14% Neph, 9 (21%) Med, 0% Neph

Normal endoscopy
Smoking (No: Med-340, Neph-83)

- Total: 122
- End (N): 35, 28, 22

- Med: 36%
- Neph: 42%

- Total: 35, 28, 22
- End (N): 63%
<table>
<thead>
<tr>
<th>Endoscopic findings</th>
<th>No</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eos Varix</td>
<td>51</td>
<td>31</td>
</tr>
<tr>
<td>Esophagitis</td>
<td>09</td>
<td>05</td>
</tr>
<tr>
<td>GORD</td>
<td>10</td>
<td>06</td>
</tr>
<tr>
<td>Ca-esophagus</td>
<td>02</td>
<td>01</td>
</tr>
<tr>
<td>Gastritis</td>
<td>25</td>
<td>15</td>
</tr>
<tr>
<td>GU</td>
<td>15</td>
<td>09</td>
</tr>
<tr>
<td>Ca-stomach</td>
<td>07</td>
<td>04</td>
</tr>
<tr>
<td>Cong. Gastropathy</td>
<td>03</td>
<td>02</td>
</tr>
<tr>
<td>DU</td>
<td>25</td>
<td>15</td>
</tr>
<tr>
<td>Duodenitis</td>
<td>07</td>
<td>04</td>
</tr>
<tr>
<td>Round worm</td>
<td>11</td>
<td>07</td>
</tr>
<tr>
<td>Endoscopic findings</td>
<td>No</td>
<td>Percentage</td>
</tr>
<tr>
<td>---------------------------</td>
<td>----</td>
<td>------------</td>
</tr>
<tr>
<td>Eos Varix</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Esophagitis</td>
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<td>GORD</td>
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<tr>
<td>Gastritis</td>
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<td>Ca-stomach</td>
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<td>04</td>
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<td>DU</td>
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<td>39</td>
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<tr>
<td>Dudenitis</td>
<td>01</td>
<td>04</td>
</tr>
<tr>
<td>Round worm</td>
<td>02</td>
<td>09</td>
</tr>
</tbody>
</table>
## Inappropriate Use of AST

<table>
<thead>
<tr>
<th>Department</th>
<th>Total no of patients</th>
<th>Endoscopy not done</th>
<th>Endoscopy normal</th>
<th>Inappropriate use of AST</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medicine</td>
<td>524</td>
<td>184(35.1)</td>
<td>175(33.4)</td>
<td>359 (68.5)</td>
</tr>
<tr>
<td>Nephrology</td>
<td>98</td>
<td>15(15.3)</td>
<td>60 (61.2)</td>
<td>75(76.5)</td>
</tr>
</tbody>
</table>

![Bar chart showing distribution of inappropriate use of AST by department](image-url)
Discussions

- The preoccupied idea that AST lacks drug interaction leads to its overuse.
- Around 70% of our patients were inappropriately using AST.
- Around 35% in medicine and 15% in nephrology were prescribed AST without doing Endoscopy.
Discussion contd…..

• Subgroup analysis showed there is ~08-19% indications of AST for steroid and NSAID prophylaxis.

• Though drug interactions are not significant but increased risk of infection by Clostridium difficile, MRSA and Vancomycin resistant Enterococcus were observed when on AST, particularly on PPI.
Discussion contd......

- Singapore researchers showed AST is 2nd of the top 10 drugs prescribed in hospitalized patients.
- Over prescription of AST occurred in 22-68% of patient population in other literatures.
- Our results are almost similar to existing data.
Limitations

- Single institution
- Not all disciplines
- Small sample sized considering total patient load.
- Logistic regression analysis was not done to see contribution of different factors.
- Doctors interview was not available regarding use of AST in patients with normal endoscopy and prophylactic use of AST with out doing endoscopy.
Conclusion

- AST is frequently over prescribed in hospitalized patient.
- It leads to increased expenditure and side effects of drug and increased risk of infections.
- Hospital Based guidelines may decrease this overuse.
Thank you