Assessment of time of occurrence of pain in cholelithiasis: a cross sectional study

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1. Introduction

Cholelithiasis is a very common clinical condition in the adult population. This condition presents with various diversities, from no symptom to a constellation of signs and symptoms of varying severity and combination. About 90% patients with cholelithiasis can have no symptom. On average there is very little chance of appearance of pain in these patients during first 10 years of their disease process. Keeping in mind the probability of clinical correlation between time of occurrence of pain with right upper abdominal pathology this study was carried out with the objective to find out association between gall bladder pathology and time of occurrence of pain in right hypochondrium.

Methodology:

This cross sectional study was carried out in the Department of Radiodiagnosis in tertiary care hospital in eastern India. Taking proportion of patients with gallstone having biliary colics as 56%, the calculated sample size using the formula \( n = \frac{Z^2 \times p \times q}{\alpha^2} \) was 536.2 (rounding off to 540). Obtaining approval from institutional ethics committee, from all the patients attending during study period for ultrasonographic evaluation of their chief complaint of pain in right hypochondrium, study subjects were selected using systematic random sampling technique. Consent was sought from the selected study subjects, in case of refusal immediate next patient was approached and included following his or her consent. For calculation of sampling interval population size was estimated from the registers maintained. It was taken as average number of patients of last three years attending for ultrasonographic evaluation of their chief complaint of pain in right hypochondrium. A total of 560 patients were assessed during the entire study period. In a pre-designed proforma time of occurrence of pain, other symptoms and findings on ultrasonographic imaging were recorded.

Results:

During the study period a total of 560 patients were assessed in the Department of Radiodiagnosis by ultrasonographic evaluation for their chief complaint of pain in right hypochondrium. Out of total 560 cases ultrasonography did not reveal any abnormality in 33(5.89%) cases but they had the complaint of pain in right upper abdomen during night. Patients detected ultrasonographically as having cholelithiasis had reported time of occurrence of the episodes of pain in right hypochondrium into account of their pain as night (from 10 PM to 3 AM), afternoon (2 PM to 4 PM), noon (10 AM to 2 PM), evening (4 PM to 8 PM) and morning (6 PM to 10 AM) in 175 (31.25%), 20 (3.57%), 8 (1.42%), 4 (0.71%) and 8 (1.42%) cases respectively. In another 219 (39.11%) cases with night pain, ultrasonography revealed acute calculous cholecystitis. Among patients detected as having chronic calculous cholecystitis, 32 (5.71%) had night pain and 4 (0.71%) had pain during evening. In 4 (0.71%) cases with night pain, gall bladder calculi with associated space occupying lesion was detected and in another one case with complaint of night pain, mucocoele was detected along with gall-bladder calculi. In 52 (9.29%) cases presenting with pain in right hypochondrium gallstone could not be detected by ultrasonography.
Table: Association between usual time of occurrence of pain and presence of gall bladder calculi

<table>
<thead>
<tr>
<th>Gall bladder calculi</th>
<th>Time of occurrence of pain</th>
<th>Total No(%)</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>During Night No(%)</td>
<td>During other No(%)</td>
</tr>
<tr>
<td>Present</td>
<td>431(76.95)</td>
<td>44(7.87)</td>
</tr>
<tr>
<td>Absent</td>
<td>33(5.89)</td>
<td>52(9.29)</td>
</tr>
<tr>
<td>Total</td>
<td>464(82.84)</td>
<td>96(17.16)</td>
</tr>
</tbody>
</table>

\[x^2 = 136.79, df = 1, p = 0.000 \]
\[OR = 15.44, 95\% CI (8.74-27.36)\]

This table shows that out of all cases with night pain 431(76.95\%) had calculi in gall bladder, which was significantly higher \(p = 0.000, OR = 15.44, 95\% CI \) compared to patients with occurrence of pain during other time of the day having gall bladder calculi 44(7.87\%).

Conclusion:

Patients with pain in right hypochondrium occurring during night are more likely to have gall bladder calculi compared to those having right hypochondrial pain occurring during other time of the day.

Conflict of Interest: None

References: