Evaluation of Different Types of Gallstones Extracted by Endoscopic Retrograde Cholangiopancreatography

MUHAMMAD AYUB NAICH1, SAGHEER HUSSAIN2, ADEEL QAMAR3, HINA ZAMIR4, ZIA UL MUSTAFA5, FATIMA CHEEMA6

1Assistant professor gastroenterology, Sir Ganga Ram Hospital, Lahore
2Consultant Gastroenterologist DHQ Hospital, Sheikhupura
3Assistant Professor Gastroenterology, Sahara Medical College, Narowal
4Assistant Professor Medicine, Sir Ganga Ram Hospital Lahore
5Associate Professor of Medicine, Sahara Medical College, Narowal
6Registrar Gastroenterology, Sir Ganga Ram Hospital, Lahore

Correspondence to: Muhammad Ayub Naich, Email: mnaich@hotmail.com, Cell: 03324662546

ABSTRACT

Objective: To study frequency of various types of gall stones extracted from bile duct using ERCP

Study design: This is a cross sectional study

Study place and duration: Study was conducted in the department of Gastroenterology Sir Ganga Ram Hospital Lahore. Study was completed in six months duration from January 2022 to June 2022.

Materials and methods: Diagnosed cases of bile duct stones were underwent ERCP and extracted stones were analyzed to determine their composition. Ages of the patients were 20-70 years. Cases of either gender irrespective of residential area were included in this study. Patients with ischemic heart disease, asthma, liver cirrhosis, malignancy, tuberculosis, chronic obstructive pulmonary disease, interstitial lung disease and pregnancy were excluded from the study. During ERCP gross findings of the stones were noted.

Results: Total 140 cases were studied having bile duct stones including 55(39.3%) male and 85(60.7%) females. There were 80(57%) cases with the age ≤50 years and 60(42.9%) cases above 50 years. Mean age of the patients was 46 ± 4.72 years. 58(41.4%) cases were from rural area and 82(58.6%) from urban area. Diabetes, hypertension and obesity was found in 38(27%), 47(33.6%) and 49(35%) cases respectively. Cholesterol stones were found in 51(36.4%), mixed stones in 70(50%) and brown pigmented stones in 19(13.6%) cases.

Conclusion: Mixed cholesterol gall stones were most commonly found followed by pure cholesterol and brown pigmented stones.

Keywords: Gallstones, Bile duct stones, ERCP, Endoscopy, Cholesterol stones,
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Table-I: Frequency of gallstones with respect to different study parameters (n=140)

<table>
<thead>
<tr>
<th>Study Parameters</th>
<th>Types of Stones</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cholesterol stones (n=51)</td>
<td>Mixed stones (n=70)</td>
</tr>
<tr>
<td>Gender</td>
<td>Male (n=55)</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td>Female (n=85)</td>
<td>30</td>
</tr>
<tr>
<td>Age (years)</td>
<td>&lt;50 y (n=80)</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>&gt;50 y (n=60)</td>
<td>21</td>
</tr>
<tr>
<td>Residential area</td>
<td>Rural (n=58)</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>Urban (n=82)</td>
<td>36</td>
</tr>
<tr>
<td>Diabetes</td>
<td>Yes (n=88)</td>
<td>08</td>
</tr>
<tr>
<td></td>
<td>No (n=102)</td>
<td>43</td>
</tr>
<tr>
<td>Hypertension</td>
<td>Yes (n=47)</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>No (n=93)</td>
<td>39</td>
</tr>
<tr>
<td>Obesity</td>
<td>Yes (n=49)</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td>No (n=91)</td>
<td>34</td>
</tr>
</tbody>
</table>

DISCUSSION

Gall stones obstructing bile duct are major indication for endoscopic retrograde cholangiopancreatography (ERCP) with minimum complications, less morbidity and having significant positive impact on the patient life.

In the recent decade significant development has occurred in the management of biliary diseases. In our study 140 cases were included with bile duct stones including 55(39.3%) male and 85(60.7%) female cases. There were 80(57%) cases with the age ≤50 years and 60(42.8%) cases above 50 years with mean age of the patients 46 ± 4.72 years. 58(41.4%) cases were from rural area and 82(58.6%) from urban area. Cholesterol stones were found in 71(36.4%), mixed stones in 70(50%) and brown pigmented stones in 19(13.6%) cases. Akram et al reported 62% female cases with bile duct stones. Hassan et al has also reported majority of female cases in the study group as 70 having bile duct stones. Hameed et al reported gallstones obstructing bile duct in majority of female cases with the frequency of 73%. These results are similar to our findings. A study conducted in Singapore by Bhavesh et al stated that bile duct stones are more common among female population having frequency of 55%. In contrary to above results a previous study conducted in China reported bile duct stones more common among male cases. A recent study by Wang et al reported mean age of the study cases as 45.78 ± 11.4 years with the range of ages as 30-70 years. A study conducted in Brazil found mean age of the cases as 48.73 ± 11.87 years having bile duct stone disease. In our study diabetes, hypertension and obesity was found in 38(27%), 47(33.6%) and 49(35%) cases respectively. Mariana et al conducted a study in Italy, reported 10% patients with diabetes mellitus and 30% cases with hypertension. However in our study frequency of diabetes mellitus was higher. In our study 80(57%) cases had single bile duct stone while 60(43%) cases had multiple stones. According to a study done by Qayed et al single bile duct stone was found in 60% cases, their results were similar to our study results. In our study mixed cholesterol stones were more commonly found which indicate early management of high cholesterol level in our population to reduce the prevalence of the disease.

CONCLUSION

In our study mixed cholesterol stones were high in frequency followed by pure cholesterol stones and pigmented stones. High prevalence of the bile duct stones was associated with rural residential status, diabetes mellitus, obesity and hypertension and female gender.

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Conflict of interest: No

REFERENCES


