Endoscopic Retrograde Cholangio-Pancreatography (ERCP) – Limitations and Mortality

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Abstract

Background: To study factors responsible for limitation and frequency of mortality complicating ERCP.

Methods: In this descriptive study all the patients who underwent ERCP, were included, irrespective of the indications, gender, ages or provisional diagnosis. The procedural limitations and mortality rate were noted and after entry of data in Statistical Package for Social Sciences (version 17) analysis was done. Exact frequencies along with percentages were calculated for various limitations and gender-wise distribution of patients was also compared by applying chi square test at 5% level of significance.

Results: Of the total 250 procedures performed, 19.8% cases encountered various limitations. Most common being failed cannulation (58%). In 10.41% procedure was hampered due to patient’s critical condition. After procedure 5(2%) mortality cases were observed.

Conclusion: Limitations were encountered in 19.2% of the total ERCP procedures. Failed cannulation was the most frequently noted limitation. ERCP related mortality was 2%.

Key Words: Endoscopic Retrograde Cholangio-Pancreatography, ERCP

Introduction

Endoscopic Retrograde cholangiopancreatography (ERCP) is a system that is focused around the utilization of endoscopy and fluoroscopy to diagnose and treat illnesses in regards to biliary and pancreatic duct system. The inner of stomach and duodenum can be visualized by endoscope and radiographic contrast can be infused into pancreatic and biliary ducts so they can be seen on x-ray. ERCP can be utilized to diagnose and treat distinctive conditions like gallstones and biliary strictures.1

ERCP is a complex methodology with significant potential risks. It is important to comprehend the potential risks and limitations. ERCP being a diagnostic and therapeutic procedure can be more beneficial to patient if the limitations related to procedure can be overcome.2

According to American Society for Gastrointestinal Endoscopy the overall mortality rate after diagnostic ERCP is approximately 0.2%, where as the death rate after therapeutic ERCP are twice as high (0.4%-0.5% in 2 larger prospective studies). In a large meta-analysis, overall ERCP-specific mortality was 0.33% (95% CI, 0.24%-0.42%). Any of these complications can be proved fatal. The mortality rate must be considered in the light of underlying indication for ERCP and patient compatibility.3

Patient and Methods

This descriptive study was conducted at Liver Centre of Holy Family Hospital, Rawalpindi from January 2012 to December 2012. All the patients who underwent ERCP at the facility, irrespective of the indications, gender, ages or provisional diagnosis were included in the study. The procedural limitations and mortality rate were noted and after entry of data in Statistical Package for Social Sciences (version 17) analysis was done. Exact frequencies along with percentages were calculated for various limitations and gender-wise distribution of patients was also compared by applying chi square test at 5% level of significance.

Results

Of the total 250 analyzed cases, procedural limitations were encountered in 48 patients (19.2%). The commonest limitation was due to cannulation failure (Table 1). Five patients expired due to complications of the procedure. One patient had intestinal perforation while the rest has sepsis.

Discussion

Bodger K et al. analyzed patients undergoing ERCP at different hospitals of England from 2006 to 2008, which showed a higher mortality rate (5.3%) than our hospital which is 2%. The mortality rate also varied from hospital to hospital. According to Coelho
Prabhu et al. the mortality rate of Minnesota of 30 day span was 2.4%, but as compared to our study the study period was shorter. So it can be interpreted that it also would be more than our mortality rate. In another study Merete et al experience low mortality rate (1%). According to Donald PB et al, the mortality rate in after ERCP was negligible. Fylona et al found mortality rate, due to intestinal perforation, 1%. Marc F et al. shows in his study that the results of cannulation success rate after precut sphincterotomy was found to be 87% which is a slight less than our value which is 90.6%. 

In the study of Schwacha H et al the success rate was 84% showing higher number of failure rate in their studies. According to Maeda S wt al the success rate was 93% showing better results than ours. In the study of Tang SJ et al the failure rate was negligible. Davee et al says that despite the major advances in imaging, guide wires and the procedure by expert endoscopists, the success rate was still 85%. Faylona et al says that in their studies the cannulation failure rate was 10.6% comparable to ours 9.4%. All of the above studies shows that the technique and standard procedure has significant effect on the procedure.

Table 1: ERCP- Limitations

<table>
<thead>
<tr>
<th>Limitations</th>
<th>No (%)</th>
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<tbody>
<tr>
<td>Failed cannulation</td>
<td>24(58%)</td>
</tr>
<tr>
<td>Frequent awakening of patient</td>
<td>03(6.25%)</td>
</tr>
<tr>
<td>Procedure delayed due to anesthesia related complication</td>
<td>02(4.16%)</td>
</tr>
<tr>
<td>Patient critical condition</td>
<td>05(10.41%)</td>
</tr>
<tr>
<td>Luminal Stenosis</td>
<td>03(6.25%)</td>
</tr>
<tr>
<td>Difficulty in balancing scope because of malfunctioning of papillae</td>
<td>02(4.16%)</td>
</tr>
<tr>
<td>Instrumental malfunctioning</td>
<td>01(2.08%)</td>
</tr>
<tr>
<td>Patient unprepared</td>
<td>01(2.08%)</td>
</tr>
<tr>
<td>Lax gut</td>
<td>01(2.08%)</td>
</tr>
<tr>
<td>Prolonged procedure</td>
<td>06(12.41%)</td>
</tr>
</tbody>
</table>

Conclusion

1. Limitation encountered were 19.2%, of the total 250 ERCP procedures performed.
2. Failed cannulation was the most frequently noted limitation. ERCP related mortality was 2%.
3. Well defined selection criteria and improved patients’ preparation can further curtail the limitations associated with ERCP

References