Original Research Article

A comprehensive study on the organisms causing cholecystitis

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Abstract

Background: Cholecystitis either acute or chronic is predominantly caused by gut bacteria. The etiology can be rarely due to other organisms. There is well documented evidence on the incidence of common organisms causing cholecystitis in western countries but it cannot be typically extrapolated to our set up and need to be evaluated.
Aim: The aim of this study was to study the incidence, assess risk factors and evaluate the severity of cholecystitis caused by various organisms in patients coming to Govt. Stanley Hospital.
Materials and methods: This was a prospective study consisting of 50 patients diagnosed as cholecystitis (calculous/ acalculous) who underwent laparoscopic or open cholecystectomy in our institution. With all aseptic precautions intra-operatively bile was aspirated from gall bladder and inoculated in culture media appropriately to detect the possible organisms.
Results: Bile cultures grew bacterium in 48 of 50 patients. 32 patients' cultures were positive for aerobes. 11 patients grew anaerobes. 5 patients had mixed flora. Among the mixed flora, 2 had only aerobes and the remaining had both aerobes and anaerobes. 2 patients had no growth in their cultures
Conclusion: E.coli was found to be the commonest organism in our study as already been reported elsewhere. Klebsiella was the second commonest overall and among the aerobes. Bacteroids fragilis are the commonest anaerobes to be grown in the cultures.

Key words

Cholecystitis, Cholecystectomy, Bile.

Introduction

Cholecystitis dominates the diseases of the biliary tract. Gall bladder disease has a wide geographic variation, although reports of cholecystitis in India are well documented, data on overall incidence of organisms causing cholecystitis is scanty. The present study was carried to determine the most common organism causing cholecystitis.

Materials and methods

This was a prospective study consisting of 50 patients diagnosed as cholecystitis (calculous/ acalculous) who underwent laparoscopic or open cholecystectomy in our institution. With all aseptic precautions intra-operatively bile is aspirated from gall bladder and inoculated in culture media appropriately to detect the possible organisms.

Inclusion criteria

- Patients of any age presenting as either calculous or acalculous cholecystitis.

Exclusion criteria

- Immunocompromised patients who had an indolent course

Methodology

Patients who were admitted in our hospital with cholecystitis were included. A detailed history taking and clinical examination were done. Patients included in the study underwent cholecystectomy either lap/ open. With all aseptic precautions intra-operatively bile was aspirated from gall bladder and inoculated in culture media appropriately to detect the possible organisms. The clinical profile of the patients was noted. Results were tabulated and analyzed.

Results

This observational study was done in patients admitted in department of general surgery, Stanley Medical College.

Table - 1 documents the age distribution of the patients taken for the study. **Table - 2** shows the percentage of patients with calculous and acalculous types of cholecystitis. **Table - 3** shows the number of patients with the type of Cholecystectomy done. **Table - 4** shows the relative percentage of different organisms causing cholecystitis.

Table – 1: Age distribution.

Age group (Years)	Total
<20	1
21-30	7
31-40	9
41-50	11
51-60	14
61-70	7
>71	1

Table – 2: Types of cholecystitis.

Type of cholecystitis	No of patients
Calculous cholecystitis	46
Acalculous cholecystitis	4

Table – 3: Type of cholecystectomy done.

Type of surgery	No of patients
Lap cholecystectomy	32
Open cholecystectomy	18

Discussion

Diseases of the gall bladder which mainly comprise of Cholecystitis and cholelithiasis are prevalent in certain regions of the world. A bacterial cause of cholecystitis has been proposed and positive bile cultures have been noted in 60% of patients with acute cholecystitis. Interest has continued to abound in the role of infections in cholelithiasis [1]. Two fallacies however exist in this regard

- Firstly the culture of the organism at the time of operation does not necessarily indicate a cause effect relationship between the organism and lithogenesis as infection may be secondary to calculus formation [2].
- Secondly the failure to isolate the organism from bile also does not indicate that the etiology is unrelated to the

infection as it is well known the organism which has initiated the stone precipitation may not persist in the viable form in the bile till surgery [3, 4].

Table – 4: Bile culture –organisms.

No of patients with Aerobes			**No of patients with Anaerobes**		**No of patients with mixed growth**	**No growth**
32			11		5	2
E. coli 16	Klebsiella 11	Others 5	Bacteroids fragilis 8	Others 3		

Conclusion

Thus the incidence, risk factors and severity of the patients with cholecystitis have been dealt in detail by our study. The results of our study are as follows:

- E.coli was found to be the commonest organism in our study as already been reported elsewhere.
- Klebsiella was the second commonest overall and among the aerobes.
- Bacteroids fragilis are the commonest anaerobes to be grown in the cultures.

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