e-ISSN: 0975-1556, p-ISSN:2820-2643
Available online on www.ijpcr.com
International Journal of Pharmaceutical and Clinical Research 2024; 16(6); 1654-1656
Original Research Article

A Case Series on Bacteriobilia in Patients with PTBD Inserted Due to Malignant Obstructive Jaundice

Ragi R. G.[1], Neethu Kishor[2], Mithu M. G.[3], M. C. Sathya Bhama[4], Parvathy J[5], Kiran Gopal[6]

[1]Assistant Professor, Department of Microbiology, Government Medical College, Thiruvananthapuram
[2]Assistant Professor, Department of Microbiology, Government Medical College, Thiruvananthapuram
[3]Assistant Professor, Department of Microbiology, Government Medical College, Thiruvananthapuram
[4]Associate Professor, Department of Microbiology, Government Medical College, Thiruvananthapuram
[5]Junior Resident, Department of Microbiology, Government Medical College, Thiruvananthapuram
[6]Assistant Professor, Department of Microbiology, Government Medical College, Thiruvananthapuram

Received: 25-03-2024 / Revised: 23-04-2024 / Accepted: 25-05-2024
Corresponding Author: Dr. Kiran Gopal
Conflict of interest: Nil

Abstract:
The bacterial isolates including their antibiogram in cases of bacteriobilia in whom PTBD was inserted due to malignant obstructive jaundice was studied. The study included 8 cases where E.coli, Klebsiella, Enterococci and Pseudomonas aeruginosa were isolated from bile.Use of specific antibiotics against the isolated pathogen as per culture report led to good result in all cases.

Keywords: Bacteriobilia, PTBD(Percutaneous Transhepatic Biliary Drainage).

Introduction

Bile is usually a sterile body fluid. Bacterial colonization of bile is known as bacteriobilia. It is predisposed by biliary obstruction and/or interventions. PTBD is an invasive procedure that can be used in the diagnosis and treatment of biliary disorders. It can potentially lead to infectious complications like bacteriobilia. Bacteriobilia is treated with antibiotics based on their action against the isolated organisms. This article gives a brief analysis of isolates with their antibiogram from bile samples of 8 patients on PTBD suspecting bacteriobilia, during a 6 month period from October 2022 to March 2023 at the Microbiology Laboratory, Govt. Medical College, Thiruvananthapuram

Materials and Method

Gram staining of bile samples were done ,followed by inoculation aerobically on blood agar, MacConkey agar ,salt agar and glucose broth. Anaerobic inoculation on blood agar plates using alkaline pyrogallol was also done. Aerobically incubated plates were read after 24hours and anaerobic after 48hours.The liquid media was subculture only if there was any turbidity. The organism grown was identified based on their morphology, culture characteristics and standard biochemical reactions [1]. Antiobiotic susceptibility test was done by Kirby-Baeur disc-diffusion method. [2]

Case 1. 65 year old male presented with fever and abdominal pain since 1 week. He is a known case of Hilar cholangiocarcinoma on PTBD. Bile was sent for culture and sensitivity: Gramstain-pus cells plenty, gram negative bacilli(+). Culture yielded growth of resistant Klebsiella species which was sensitive to Tigecycline. Patient improved clinically with Tigecycline, bilirubin level decreased from 8-3 mg/dL.

Case 2. 63 year old female presented with recurrent fever, chills and rigor since 2 weeks. She is a known case of periampullary carcinoma on PTBD. Bile was sent for culture & sensitivity: Gramstain:pus cells:4-6/OIF Gram-positive cocci(+). Culture yielded growth of Enterococcus species sensitive to Vancomycin and Linezolid. Patient improved clinically with Vancomycin and Linezolid, bilirubin level decreased from 10 to 6mg/dL.

Case 3. 46 year old female presented with fever and abdominal pain since 5 days known case of Carcinoma pancreas with liver Metastasis on PTBD. Bile Culture and sensitivity: Gramstain: pus cells plenty, gram negative bacilli(+). Culture yielded growth of Pseudomonas aeruginosa sensitive to gentamicin, amikacin, ceftazidime, piperacillin-tazobactam, meropenem, cefepime. Patient improved clinically with meropenem and amikacin, bilirubin level decreased from 6- 3mg/dl

Case 4. 60/F presented with fever and abdominal pain since 2 days. K/c/o Hilarcholangio carcinoma on PTBD. Bile C & S: Gram stain: pus cells1- 2/OIF, no organisms. Culture yielded growth of Klebsiella sp. Sensitive to amikacin cotrimoxazole, meropenem, Tigecycline. Patient improved clinically with meropenem and amikacin bilirubin level decreased from 6-2mg/dl.

Case 5. 65/M presented with fever and abdominal pain since 2 week. K/c/o Hilar cholangiocarcinoma on PTBD. Bile C&S: Gram stain-no pus cells, no organisms. Culture yielded growth of Klebsiella sp. sensitive to Gentamicin, Amikacin, Cotrim oxazole, Tigecycline. Patient improved clinically with Tigecycline, bilirubin level decreased from 10-2 mg/dl

Case 6. 61 year old female presented with fever, vomiting and abdominal discomfort since 1 weeks. She is a known case of Hilar cholangiocarcinoma on PTBD. Bile sent for Culture & Sensitivity: Gram stain: pus cells: 2- 4/OIF. Culture yielded growth of Pseudomonas aeruginosa sensitive to Gentamicin, Amikacin, Ciprofloxacin, Ceftazidime, Piperacillin-tazobactam, Meropenem. Patient improved clinically with Amikacin and Meropenem, bilirubin level decreased from 8 to 4mg/dL.

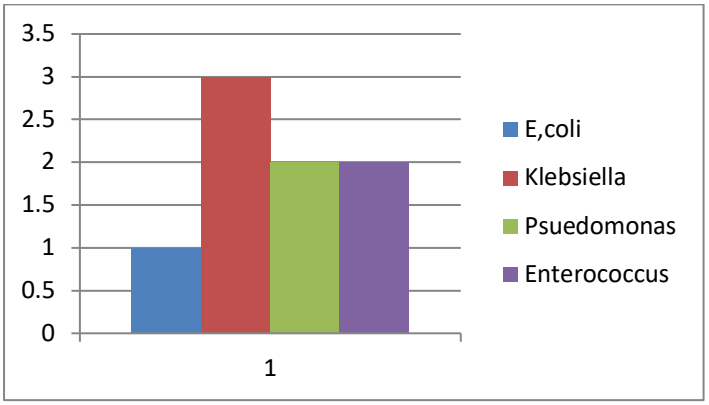
Case 7. 64 year old female presented with complaints of fever and abdominal pain since 10 days. She is a known case of Hilar cholangiocarcinoma on PTBD. Bile Culture & Sensitivity Gram stain:pus cells:0- 1, Gram positive cocci (+). Culture yielded growth of Resistant Enterococcus species sensitive to Vancomycin, Linezolid. Patient improved clinically with Linezolid and Meropenem, bilirubin level decreased from 8-3mg/dl.

Case8. 53 year old female presented with complaints of fever and abdominal painsince1week. She is a known case of Hilarcholangio carcinoma on PTBD. Bile Culture & Sensitivity: Gram stain: Pus cells-2-4/OIF, no organism. Culture yielded growth of E.coli Sensitive to Gentamicin, amikacin, Piperacillin- tazobactam, Cefoperazone- sulbactam, cotrimoxazole, meropenem, Tigecycline. Patient improved clinically with meropenem and amikacin, bilirubin in level decreased from 9 to 3mg/dL.

Result

The organism isolated from bile samples collected from study participants included Klebsiella species., E.coli, Enterococcus spp. and Pseudomonas aeruginosa.

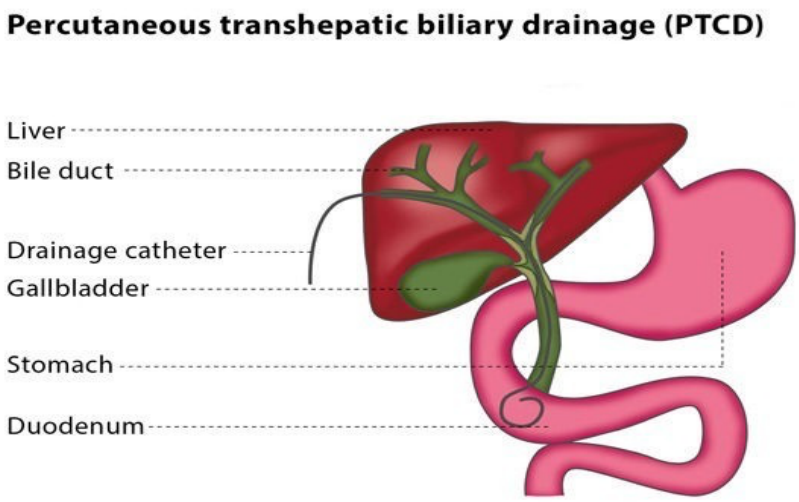
Isolate		***Klebsiella***	***Psuedomonas***	***Enterococcus***
number	1	3	2	2



Discussion

PTBD is an USG guided invasive procedure done by interventional radiologist.2ml bile is collected for culture & sensitivity. Usually PTBD is placed for 2-3weeks but, based on clinical condition, it can be kept for 2-3months or even lifelong in palliative patients not suitable for surgery. In above study the distribution pattern of klebsiella (3), E.coli (1), Enterococcus (2), Psuedomonas aeruginosa (2).

According to a study by T Röschetal: Biliary bacteria were found in 60% of cases during the initial PTBD placement, and 24 h later this rate had already increased to 85%; two or more microorganisms were found in 40% initially and in 70% after a few days. [3] At later PTBD exchanges, bacteriobilia was found in 100%, with all patients harbouring multiple organisms. Whereas the initial spectrum was mixed, Escherichia coli and enterococci (97% each), Klebsiella (73%) and Bacteroides species (37%) later predominated; Candida increased initially from 15% to 80%, but later decreased to 30%. Clinical signs of cholangitis were observed in 30% initially (no sepsis), but decreased to 6% at later exchanges. [4]



Conclusion

Bacteriobilia is a frequent event in patients on PTBD. A knowledge of bacterial spectrumis important for selecting appropriate antibiotic coverage for the same. This can also reduce the rate of development of antimicrobial resistance. Also, in high risk patients such as immunosuppressed, bile culture should be performed routinely, even if there is no clinical data of infection.

Reference

1. Colle JG, Marmion BP, Fraser AG, Simmons A. Mackie & McCartney Practical Medical Microbiology. 14th ed. Elsevier: London;1996.
2. Clinical and Laboratory Standards Institute 2022. Performance Standards for Antimicrobial Susceptibility Testing. 32nd informational supplement. Clinical and Laboratory Standards Institute Wayne PA. 2022.
3. T. Rösch, A. Triptrap, P. Born, R. Ott, N. Wei gert, E. Frimberger, H. D. Allescher, M. Classen & K. Kamereck. Bacteriobilia in percutaneous transhepatic biliary drainage: occurrence over time and clinical sequelae. 2003.
4. A prospective observational study, Scandin avian Journal of Gastroenterology, 38:11,11 62-1168.