Role of change in the levels of inflammatory markers post drainage in predicting outcome in acute cholangitis
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Aim and Objectives

- **Aim**: To evaluate the predictive value of changes in CRP and procalcitonin levels after biliary drainage in relation to outcomes (survival or mortality) at one month.
- **Primary objective**: To evaluate the predictive value of change in CRP and procalcitonin levels post drainage in predicting complete improvement or death at 1 month.
- **Secondary objective**: To compare the factors associated with culture positive and culture negative cases of AC and also to study the microbiological spectrum isolated from bile and their antibiotic sensitivity pattern.
Methodology

- **Study design**: Prospective observational study
- **Study duration**: August, 2020 to December, 2020
- **Study setting**: Tertiary care center in North India (PGIMER, Chandigarh)
- **Sample size**: 72 patients
- **Ethical clearance**: study was approved by the Ethics Committee of the institute (IEC no. 2020/SPL-1645)
Methodology

Confirmed cases of cholangitis as per Tokyo guidelines 2018 and posted for ERCP/PTBD for biliary drainage

Before ERCP/PTBD - blood culture, procalcitonin, CRP drawn
Bile culture taken and stent/PTBD catheter placed for drainage

Post ERCP/PTBD - till in hospital stay received IV antibiotics, Day 2 procalcitonin, CRP repeated, RFT, LFT, urine output, sensorium, clinical features monitored till discharge/ death

Final outcome assessment at the end of 1 month as improvement or death
Results

- Seventy-two consecutive patients of acute cholangitis, median age: 55 years (43-62 years) and 42 (58.33%) females, were included.
- The change in serum procalcitonin and CRP although significant, had no bearing on the outcome at 1 month.
- History of fever, diabetes mellitus and WBC count were significantly associated with bile or blood culture growth.
- Altered sensorium and INR were independently associated with mortality at 1 month.
Results

• The 30 day mortality prediction of procalcitonin at admission, measured by ROC analysis, resulted in an area under the curve (AUC) of 0.697 (95% CI 0.545-0.849)

• A procalcitonin cut off of 0.57ng/ml would have a sensitivity and specificity of 80% and 60% respectively to predict mortality
Discussion

- Acute cholangitis is an emergency that needs prompt fluids, antibiotics and drainage and management depends on the grade of severity.
- Our data showed that mortality increased with the increasing grade of cholangitis and hence validated the Tokyo Guidelines 2013/2018 severity assessment.
- Based on the sensitivity pattern in our study piperacillin-tazobactam, meropenem or cefoperazone-sulbactam would serve as reasonable empirical antibiotics. This is in accordance with the TG-18 guidelines which recommend using Piperacillin/tazobactam as the empirical therapy across all the grades of acute cholangitis.
Discussion

• None of the earlier studies used the concept of decline in procalcitonin and CRP post drainage for the prediction of outcome in AC. In our study, despite drainage and significant decline in procalcitonin and CRP, it had no significant relationship with outcomes of acute cholangitis at 1 month.

• A procalcitonin cut off of 0.57ng/ml would have a sensitivity and specificity of 80% and 60% respectively to predict mortality in AC.

• Therefore, procalcitonin is a promising marker for predicting outcomes of Acute Cholangitis.