Ceftriaxone-Induced Neutropenia and Transaminitis: A Rare Idiosyncratic Reaction

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Background: Neutropenia is a recognized, although a rare side effect of ceftriaxone. In clinical trials of ceftriaxone, neutropenia was mostly observed with prolonged (more than 4 weeks) treatment. We report here a patient who developed neutropenia and transaminitis within 3 days of starting ceftriaxone. We will also review here the literature on ceftriaxone-induced neutropenia and discuss the various mechanisms.

Methods: A 48-year-old Chinese female was admitted for intermittent abdominal pain associated with fever and vomiting of nonbloody content. Her past medical history included that of a previous episode of UTI, which was treated with ceftriaxone. Physical examination was unremarkable except for mild epigastric tenderness.

Results: Investigations revealed she had neutrophilic leucocytosis and the urine microscopy revealed pyuria. She was treated for UTI with intravenous Ceftriaxone. Serial laboratory showed the development of neutropenia and transaminitis after starting Ceftriaxone. Ceftriaxone was then withheld and marked improvement of the total white cell count and transaminases was noted.

Conclusions: In the case presented, looking at the temporal profile of the patient's results, her neutropenia and transaminitis are likely ceftriaxone-induced. The development of transaminases and neutropenia within 3 days of ceftriaxone use is likely due to the fact that the patient had already been sensitized from prior exposure to ceftriaxone during her previous admission for UTI. This case illustrates that the treating physicians should be aware of this rare but a serious potential idiosyncratic complication arising from the use of parenteral ceftriaxone in the community.

Portal Pylephlebitis from Diverticular Abscess Culminating into Portal Vein Cavernous Transformation

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Background: Cavernous Transformation of the Portal Vein (CTPV) is a rare complication of portal vein thrombosis (PVT), but is rarely reported in patients with portal pylephlebitis.

Methods: We report here a 24-year-old male who presented with 1 week history of fever and abdominal pain. He had no significant past medical history. On examination he was febrile, and had epigastric tenderness. A CT scan of abdomen showed features suggestive of perforated diverticulitis with abscess formation, associated with extensive thrombosis of the portal venous system.

Results: He was treated with three weeks of antibiotics with which his symptoms improved. A follow-up Computed tomographic scan of abdomen revealed extensive portal vein thrombosis and now with cavernous transformation in the region of porta hepatitis and splenomegaly.

Conclusions: Portal pylephlebitis is a recognized complication of intra-abdominal infective and inflammatory conditions. However, it is usually not occultive and not associated with development of portal hypertension. Hence most patients are treated with antibiotics. Unlike portal vein thrombosis from other causes, anticoagulation treatment in these patients with pylephlebitis is controversial. However some of these patients can have progression of the thrombosis, and the consequential persistent portal hypertension will lead to development and dilatation of the collaterals in and around the portal triad, resulting in cavernous transformation (CTPV). CTPV is an incurable disease with limited treatment options and hence it is important to take all the measures to prevent development of this complication. We will share here the literature review on the management of portal pylephlebitis and propose our approach to patients with portal pylephlebitis.

Clinical Usefulness of Visceral Fat in Fatty Liver Severity

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Background: Obesity, especially central obesity is a risk factor of fatty liver. Whereas abdominal ultrasound is widely used to detect hepatic steatosis, it is unable to provide a precise information of hepatic fat content. Liver biopsy is not frequently performed because of its invasive nature although it is accurate. The aim of this study is to evaluate the relationship between histologic degree of fatty liver and visceral fat.

Methods: Forty seven patients with fatty liver or fatty metamorphosis in liver biopsy were enrolled. They were diagnosed from January 2003 to July 2008. Abdominal computerized tomography (CT) was performed on all subjects within a month of liver biopsy. Biopsy specimens were reviewed by two pathologists. The degree of steatosis was graded as minimal, mild (grade 1), moderate (grade 2) and severe (grade 3). Grade 0 was defined when the patients had no evidence of fatty liver in biopsy specimen although they were diagnosed via imaging study (ultrasound or CT). Abdominal fat area (total fat, visceral fat, subcutaneous fat) were quantified using abdominal CT. Liver fat content in biopsy specimen was also estimated quantitatively by morphometric analysis.

Results: The grades of hepatic steatosis were 0 in 7, minimal in 7, mild in 22, and moderate to severe in 11 patients. Baseline characteristics between groups according to the histologic degree were not significantly different. Visceral fat/total fat ratio correlated significantly with the grades of steatosis (0.43±0.14, 0.49±0.05, 0.52±0.10, 0.56±0.05, respectively). The liver fat content measured by morphometry also correlated significantly with visceral fat/total fat ratio.

Conclusions: Visceral fat, as a marker of central obesity, was correlated significantly with the histologic degree of hepatic steatosis. Measurement of abdominal fat area by CT will be clinically useful for prediction of histologic degree of fatty liver.

Relevance of Creatine-Kinase and Mean Platelet Volume in Acute Pancreatitis: Prospective Observational Study

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Background: Acute pancreatitis (AP) is an inflammatory lesion of the pancreas that can lead to multorgan failure and remote tissue injury. Our objective was to find the prevalence of creatine-kinase (CK) elevations and to study mean platelet volume (MPV) values in patients with AP.

Methods: We carried out a prospective observational study of 41 patients with AP. Severity was classified according to the revised Atlanta classification. CK and MPV were assessed using standard biochemical Methods: Age and sex matched controls (1:1 ratio) were used to compare MPV values.

Results: We studied 41 patients with AP. Although CK values on admission were significantly higher in patients with moderately-severe/severe AP compared to patients with mild AP (59.1 ± 41.3 vs 105.9 ± 85.9, p= 0.04), only one patient had CK levels slightly above the UNL. MPV was higher in patients with AP (8.32 ± 1.59 fl) compared to healthy controls (7.13 ± 0.7 fl). However, there was no difference in MPV between patients with mild or moderately severe/severe AP.

Conclusions: In conclusion, reports of significant elevations of CK in AP are mainly retrospective, of late onset, and involve patients with diverse comorbidities, severe systemic involvement and/or multiple organ failure. In our study, significant elevations in muscle enzymes were very rare and not associated with injury severity. On the other hand, MPV seems to be increased in patients with AP, reflecting a pro-thrombotic state. However, MPV does not seem to indicate disease severity. Routine CK and MPV evaluations in patients with AP would therefore seem unwarranted and of uncertain clinical significance.