Macrophage activation and increased liver recruitment plays an important role in rodenticidal hepatotoxicity

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BACKGROUND AND AIM:
We aimed to study macrophage activation in patients with rodenticide hepatotoxicity.

METHOD
Retrospective arm: From a prospectively collected database of rodenticide-hepatotoxicity patients between 2018-2019, we analyzed markers of macrophage activation [S.ferritin, sCD163, sCD25 and Macrophage Activation Syndrome criteria (MAS)].
Patients were classified into acute liver injury (ALI) and acute liver failure (ALF) based on their worst clinical status during admission.
Prospective arm: Immune cell phenotyping (done on BD FACS AriaTM III and analyzed on Flow Jo) was conducted on peripheral blood monocytes in a subset of rodenticidal induced ALF patients and results compared with healthy age-matched controls.

RESULTS
Retrospective arm:
67 patients [23(12-64) years; median(range), M:25, ALI: 38, ALF: 29, MELD:28 (7-40)] were recruited.
Correlation with MELD score.
• Serum ferritin : R=0.29,
• sCD163            : R=0.6,
• sCD25             : R=0.56.

Prospective arm:
Seven ALF patients were recruited, and data compared to seven healthy controls.

CONCLUSION
• Macrophage activation is seen in most patients with rodenticide-hepatotoxicity
• Macrophage activation markers correlate with disease severity.
• Peripheral monocyte phenotype changes suggest a crucial role of monocyte/macrophages including monocyte infiltration to liver in ALF patients.