OS009

Dyserythropoiesis is underrecognized and contributes to severe anemia in liver cirrhosis

Chhagan Bihari[1], Sumit Garg[1], Shiv Kumar Sarin[2]. [1]*Institute of Liver and Biliary Sciences, Pathology and Hepatology, Delhi, India;* [2]*Institute of Liver and Biliary Sciences, Hepatology, Delhi, India*
Email: shivsarin@gmail.com

Background and aims: Moderate to severe anemia is one of the common complication in liver cirrhosis and is often multifactorial. Contribution of dyserythropoiesis (DE) in cirrhosis related anemia is often neglected and has not been studied. We aimed to investigate the prevalence, severity and mechanisms of dyserythropoiesis in cirrhosis patients.
Method: We studied the bone marrows (BM) of cirrhosis patients (n = 517), who underwent a BM aspiration/biopsy between Jan 2014–Dec 2018, for investigation of anemia, hypersplenism or other clinical indications. Cases of haematological or non-hematological neoplasias, chronic kidney disease, chronic or acute drug injury, acute and chronic hepatitis and granulomatous pathology were excluded. Morphological analysis of BM aspirate, biopsies, erythroid colony assessment were done. A >5% dyserythropoiesis in erythroid lineage was considered and categorized as mild: 5–10%; moderate: 10–15% and marked: >15%.
Results: A 68/517 (13.2%) cirrhosis patients had dyserythropoiesis and none from control group. Of them 44% had mild; 35.4% moderate and 20.6% marked dyserythropoiesis in the BM. Cirrhosis patients with DE had significantly lower hemoglobin than those without DE (7.6 ± 1.4 gm/dl vs 8.9 ± 1.9 gm/dl, p < 0.001), but comparable serum iron (83.7 ± 42 vs 90.2 ± 46.6 mcg/dl, p = 0.997); total iron binding capacity (243.2 ± 85.1 vs 231 ± 87.2 mcg/dl, p = 0.291); and transferrin saturation (50.9 ± 27.9 vs 55.6 ± 30.8 %, p = 0.206) and serum folate (16 ± 3.8 vs 15.8 ± 4.4 ng/ml) levels. The former however, had higher vitamin B12 (2339.2 ± 1406 vs 1842 ± 1411.9 pg/ml, p = 0.010) levels. Further, other confounding factors for anemia like lactate dehydrogenase (p = 0.494), reticulocyte count (p = 0.808), thyroid stimulating hormone (p = 0.208), hepcidin (p = 0.16), erythropoietin (p = 0.23), and spleen size (p = 0.310) were comparable. Grades of dyserythropoiesis were associated with Child's score (p = 0.003) with marked dyserythropoiesis being noted in Child C. Dyserythropoiesis was mainly associated with alcohol and non-alcoholic steatohepatitis (51/68, 75%) as compared to viral, autoimmune and other etiologies. BM examination showed fewer erythroid colonies (8 vs. 10.7, p < 0.001) and proerythroblasts (7 vs. 17.9, p < 0.001) in the erythroid colonies of patients with DE. The DE was significantly related with low GATA.1 (7.7 ± 4.3 vs 13.6 ± 7.8; p = 0.001) non-nuclear localization of HSP70 (p = 0.04) and excess erythroferrone (23.4 ± 7 vs 14.2 ± 5.2, p < 0.001) as compared to no-DE.
Conclusion: Approximately 13.2% patients with cirrhosis with severe anemia show dyserythropoiesis. Standard hematological and iron studies fail to identify it and bone marrow examination is merited. Alternations in the erythroid colonies, HSP70 localization and diminished GATA.1 in BM are associated with dyserythropoiesis.

OS010

Effect of recruitement and selection policies on the volume of outcome of patients transplanted with ACLF-3

Baptiste Michard[1], Thierry Artzner[1], Pietro Addeo[1], Philippe Bachellier[1], Camille Besch[1], Vincent Castelain[1], Raphael Clere-Jehl[1], Mathilde Deridder[1], Max Guillot[1], Jean-Étienne Herbrecht[1], Ralf Janssen-Langenstein[1], Maleka Schenck[1], Francis Schneider[1], François Faitot[1]. [1]*Hopitaux Universitaires de Strasbourg*
Email: baptiste.michard@chru-strasbourg.fr

Background and aims: Liver transplantation (LT) for critically ill cirrhotic patients is a debated issue, which raises complex medical, surgical and ethical challenges. In particular, it is crucial to achieve high post-LT survival in order to justify allocating livers to these patients, especially given the current organ shortage. To date, there is no granular data concerning the 3-year post-LT outcome of ACLF-3 patients.
Method: This study describes the three-year post-LT survival of a single center granular cohort of patients with ACLF-3 at the time of LT and compares it to the post-LT survival of all the patients who were transplanted without ACLF-3 in the same center between 2007 and 2018. Over this period of time, two policies were gradually implemented in this center: (i) developing a network of peripheral centers that transferred critically ill cirrhotic patients for LT assessment and (ii) increasing use of the transplantation for ACLF-3 model (TAM) score criteria to identify the optimal transplantability window.
Results: A total of 828 first time single LTs were performed over the study period. 91 patients had ACLF-3 at the time of LT. The overall three-year survival of ACLF-3 patients was 66% vs 82% (p < 0.001) for the rest of the cohort. Over the study period, both the number of

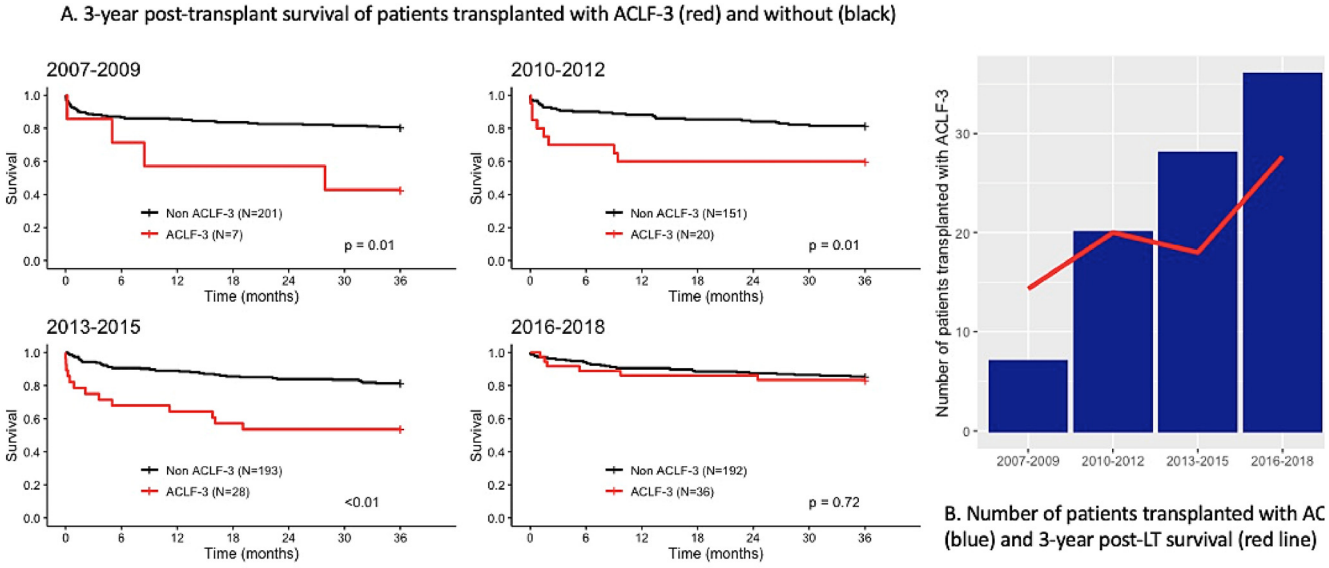

Figure: (abstract: OS010)