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## Immunohistochemical study of the stem cell marker Foxl1 in bile ductular proliferation and liver cell regeneration in liver biopsies from infants with cholestasis

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Liver cell regeneration takes place through mature hepatocytes. However, in cases of chronic or severe injury, an alternative pathway takes place through the proliferation of hepatic progenitor cells (HPCs). The aim of the study was to investigate the distribution and number of Foxl1 positive HPCs in the livers of infants with different cholestatic diseases. Therefore, immunohistochemistry using Foxl1 antibody

(ab190226) was conducted on fifty-three formalin fixed paraffin embedded blocks of liver biopsies from infants with neonatal cholestasis with the following diagnoses: Thirty cases of extrahepatic biliary atresia (EHBA), eleven cases of paucity of intrahepatic bile ducts (PIBD), eight cases of idiopathic neonatal giant cell hepatitis (NGCH) and four cases of galactosemia. Trichrome staining was done to assess the stage of fibrosis according to a previously published modified scoring system. Foxl1 Positive cells were seen in the periportal area and their numbers were much higher in liver biopsies obtained from infants with EHBA compared to the other diagnoses. Significant positive correlations were found between the number of HPCs and stage of fibrosis, the degree of ductular proliferation,

the presence of portal tract neutrophils as well as higher levels of serum gamma-glutamyltransferase. In conclusion, HPCs are markedly activated in EHBA and their activation might be the reason for the associated ductular proliferation and fibrosis. However, the type of inflammatory infiltrate might play a role in HPC activation as well. This may help to guide further research on animal models to design HPC-based antifibrotic therapies for cholestatic liver diseases.

### Biography

Basma Elhaddad is a faculty member (demonstrator) at the Pathology Department, Faculty of Medicine, Alexandria University, Egypt. Basma graduated from the faculty of medicine, Alexandria University in 2010 (MBBCh)". Basma is a master's degree student with a thesis in the Pathology of Gastrointestinal tract and liver "Master of Basic Medical Sciences in Pathology (MSc.); GPA: Excellent with Honour".

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