Alkaline phosphatase serum level change in biliary stenosis following liver transplantation

Anar Ganbold[1], Munkhtsetseg Chimedtseren[1], Batsaikhan Batsuuri[2], Bat-Ireedui Badarch[2], Sergelen Orgoi[2]

[1]Gastroenterology Center, First Central Hospital of Mongolia [2]Transplantation Center, First Central Hospital of Mongolia

Улсын Нэгдүгээр Төв Эмнэлэг

Анхдагч, Манлайлагч

IC-KPBA 2020

Disclaimer

- Authors hereby declare absence of financial or any other forms of conflicts of interest in relation to the content of this study

Background

- Biliary stenosis (BS) is the most common and one of the most deleterious complications in living donor liver transplantation (LDLT) with 8-12% of the recipients involved. Early detection is vital for proper management and avoidance of complication. Alkaline phosphatase (ALP) is an important laboratory indicator of bile duct damage.

Aims and goals

- To flag potential early-stage biliary stenotic patients through serum alkaline phosphatase (ALP) change before radiologically-apparent change is present later on.
  - To see if ALP indicates any possible stenosis early on
  - To determine cut-off points for ALP in stenosis candidates

Methods

- The patients: adults with first-time, living donors right-lobe grafts.
- ALP determined by Integra 400, Roche, with manufacturer's protocol.
- Biliary stricture: MRCP-diagnosed and requiring biliary stenting.
- The data was analyzed in Two-way ANOVA method using Prism software, GraphPad.

Results

- There were 9 stenotic patients and we chose 8 control recipients operated by the FCHM team between 2016.04.01 and 2018.12.31 who survived at least one year post-operation. The dates of the first bile stent insertions were noted.
- Mean ALP for Control vs Stenotic groups diverged at 2 months post-op and reached statistical significance at 3 months with 108.7 IU/L vs 215.7 IU/L (p=0.04), respectively (Fig. 1).
- Average time for biliary stenting was 7 months post-op.

Results

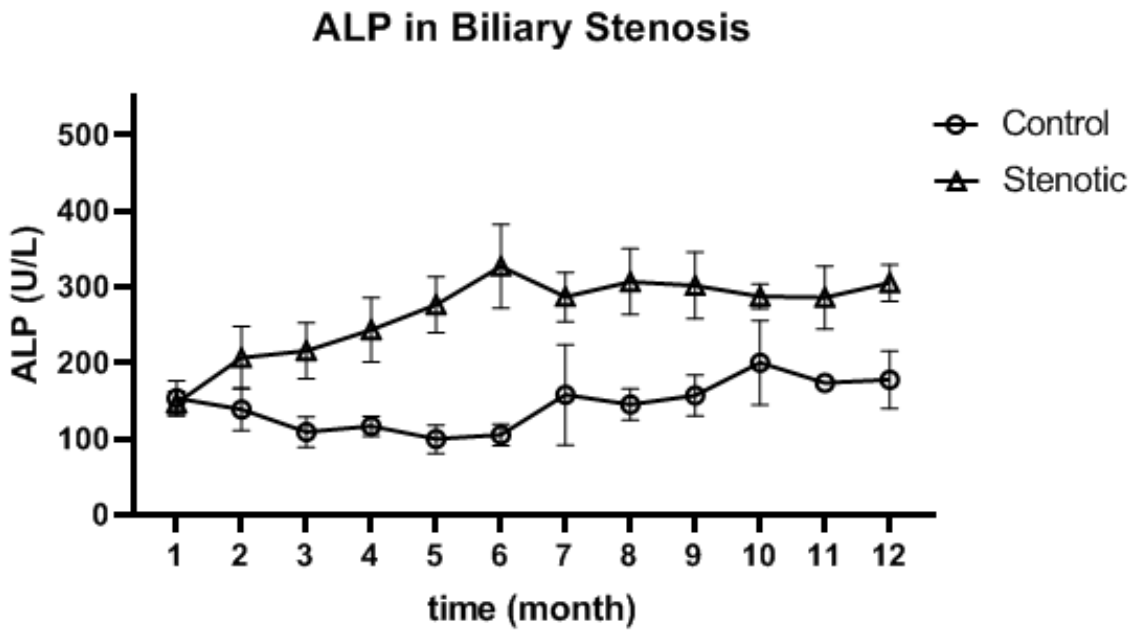

Fig. 1. Serum ALP change in Stenotic vs Control groups as function of time post-op.

Conclusions

- Provided there are no other reasons, in patients who end up being stenotic to the point of requiring biliary stenting, the ALP is already significantly elevated beyond upper limit of normal (129 U/L) at 3 month post-op. We recommend patients with ALP>200 U/L at this time point to be closely monitored and intervened as soon as possible to prevent severe stenotic morbidity and mortality.

THANK YOU