The effect of pneumoperitoneum on systemic haemodynamic and hepatic enzymes in cirrhotic versus non cirrhotic patients undergoing laparoscopic surgery using non-invasive Electrical Cardiometry.

N. Hussain¹, M. Othman¹, M. Khalil¹, S. Helal², ¹ National Liver Institute, ² Anesthesia department . Menofia University, Egypt.

Back ground & aim of work

Pneumoperitoneum PP can affect hepatic perfusion and systemic hemodynamics variably.

Aim: To evaluate PP influence on haemodynamic, monitored by Electrical bio impedance Cardiometry EC (ICON, Osypka, Germany), in cirrhotic CHILD A under laparoscopic cholecystectomy LC.

Materials & Methods

Case control study, with ethics committee approval. Consented 43 patients, (3 excluded turned opened). Cirrhotic C gp (n=20), non-cirrhotic NC gp (n=20). Post anesthesia a central venous catheter CVP (after consent, for research only) was applied. EC readings (Heart rate HR b/min, cardiac output CO l/min, systemic vascular resistance SVR dyns/s/cm-5, Stroke Volume Variation SVV%, and contractility Index CI(measures contractility, normal range: 37.5 - 62.5) Alanine aminotransferase ALT, aspartate aminotransferase AST u/l and serum lactate mg/dl. All were reported at (T1)after induction, (T2) Post (CO₂) insufflations (14-16 mmHg) and (T3) 6 h after surgery. Surgical complications, hospital and ICU stay were reported.

Results & Discussion

Total insufflation and operative times/min were comparable between 2 groups. The EC measurement (CO, SVV, SVR) at all times were comparable between the 2 groups. At (T3) CVP in C gp show significant change, from base line, but still comparable with the NC gp .The median (IQR) of (CI) in C gp was constantly lower than NC gp through out all times of measurement and repeated measures by (Friedman test P=0.02) were also significant. AST, ALT, blood lactate, postoperative complications, ICU and hospital stay all were also comparable between 2 groups.

Conclusion

NO major hemodynamics nor splanchnic circulation changes happen in CHILD A cirrhotic patients undergoing LC. The standard anesthesia monitors are fair enough in such procedures .The use of Cardiometry can be recommended in cirrhotic for early diagnosis of cardiomyopathy , further studies with bigger sample size is recommended.