SUMMARY

Hypotensive anesthesia offers a dry surgical field and may reduce blood loss and hence the need for transfusion. The influence of hypotensive anesthesia on splanchnic perfusion is ground for research.

With the acknowledgment that almost all anesthetic techniques reduce liver blood flow, it would seem wise that during procedures performed under hypotensive anesthesia, where further reduction of liver blood flow may be detrimental, that the techniques and the agents used should be those that have the least effect on liver blood flow, and on hepatocellular integrity.

The most widely used method of assessing drug-induced hepatocellular damage in man is the measurement of transaminase activity in plasma. However, these measurements lack sensitivity and may have poor organ specificity. The measurement of the hepatic isoenzymes GST using ELISA is a sensitive and specific method, proposed as an alternative for the detection of acute and early drug-induced hepatocellular damage.

The aim of this work is to assess hepatocellular integrity during hypotensive anesthesia, using more specific and sensitive markers α GST, π GST and hyaluronate, comparing sevoflurane and propofol, both with relatively less predictable hepatic insult, in an attempt to find out the best anesthetic agent and technique and recommend it during such procedures.

After ethical committee approval and after adequate preoperative evaluation, this study was conducted on consented sixty (60) patients ASA (I-

II) admitted at the urology department at Theodor Bilharz Research Institute (TBRI) scheduled for elective pelvic procedures (urological operations) that last 1-2 hours e.g. bladder or ureteric stone, stricture ureter.

The sixty patients were divided into 4 groups, group I: (Propofol without hypotensive anesthesia), group II: (Propofol with hypotensive anesthesia), group III: (Sevoflurane without hypotensive anesthesia) and group IV: (Sevoflurane with hypotensive anesthesia).

Hypotensive anesthesia was achieved by using nitroglycerin infusion at 0.5-10 μg. kg^{-1}. min^{-1} which was started right after intubation to maintain the MAP of 50-80 mmHg. The dose was gradually titrated to achieve the target MAP.

A total of five venous blood samples (5 ml each) were taken from each patient at the following intervals: Pre-induction, 15 minutes after stabilization of MAP, 30 minutes, 60 minutes and 24 hours after recovery.

These samples were assayed for hepatic GST (α and π) and hyaluronate using ELISA.

Results from the present study imply that propofol per se is not inclined to cause distortion in the hepatocellular integrity. It provokes hepatocellular insult only with hypotensive anesthesia. The cause is mainly due to the reduction in the hepatocellular perfusion.

On the other hand, sevoflurane per se might cause some hepatocellular insult as shown by rise in α GST in group III at T3. This insult caused by sevoflurane is aggravated by the hypotensive technique.

Ultimately, it was not resoluted which anesthetic is superior during hypotensive technique, and judgment is left to the anesthetist, bearing in mind cost-benefit effects. This calls for further evaluation of this issue.