SUMMARY AND CONCLUSION

The normal pressure in the portal vein is between 5 and 10 mmHg. When the pressure in the portal vein is more than 5 mmHg above inferior vena caval pressure portal hypertension is present. Portal hypertension is a complication of several hepatic and extra-hepatic diseases. It is also considered as one of the major causes of morbidity and mortality in patients with liver disease.

Considering the facts that the principle symptoms of portal hypertension are due primarily to alteration in the circulation of the portal venous system and the ability of color Doppler to record these circulatory changes, all this make color Doppler an important non invasive diagnostic tool in investigating portal hypertension. Recent advances in ultrasonography especially Doppler flow studies have made it the investigation of choice for portal hypertension. Its non-invasive nature is ideally suited for all age groups. Color Doppler is not only a safe, non-invasive, and relatively cheap modality of investigation of portal hypertension but also provides qualitative data such as the presence, direction, and characteristics of blood flow as well as quantitative data such as mean velocity and flow volume. The limitations of Doppler examination are similar to real time sonography. The examination is operator dependent and requires some training not only in sonography but also in the physics of Doppler. Knowledge of the physiology of liver and splanchnic blood flow and its adaptation to portal hypertension is essential.

This study aims to evaluate the role of color Doppler sonography in the diagnosis of portal hypertension. It included 30 patients of different age groups suffering from portal hypertension.

While this study found a significant difference of the splenic and hepatic sizes between patients and control group being larger in the patient group, there was also significant difference between patients and controls regarding portal vein diameter. The mean portal vein diameter for the patients was 1.4 ± 0.3 cm while that of control was 0.8 ± 0.1 cm .

The mean portal blood flow velocity was significantly lower among patients than that of controls. It scored 10.7 ± 4.9 cm/sec versus 20.12 ± 4.8 cm/sec respectively. The mean portal blood flow volume was found to be lower among some patients compared to that of controls.

No significant correlation could be established between oesophageal varices (their size as well as variceal bleeding) and the different parameters of Doppler measurements.

This study concluded that Doppler ultrasonography by detecting haemodynamic changes of the portal venous system is a useful safe non-invasive modality in the diagnosis of portal hypertention. It is indispensable in the determination of the level of portal hypertension, as well as in detection of portosystemic collaterals. In diagnosis of portal hypertension, a lower portal vein velocity is a more reliable sonographic finding than dilatation of portal vein trunk. Different haemodynamic parameters of the portal vein, have no correlation with the degree of oesophageal varices detected by endoscopy thus the predictive value and prognostic role of Doppler is questionable.

RECOMMENDATIONS:

- Doppler examination should be conducted for all patients with chronic liver disease. It should be applied as a routine investigation for them as it is considered an ideal non-invasive modality for diagnosis of portal hypertension
- Provided that accurate Doppler technique is performed, measuring portal vein velocity may be useful when portal hypertension is suspected especially when other sonographic findings are equivocal