SUMMARY

Patients with end-stage renal failure suffer from impaired regulation of body fluid balance. Excess fluid has to be removed by dialysis. At the beginning of each haemodialysis session target weight loss is determined according to the estimation of excess fluid volume in order to obtain the patient's optimal weight (dry weight). Underestimation of dry weight leads to complications of hypovolaemia with adverse symptoms such as dizziness, headache and muscle cramps and in extreme cases endangers perfusion to vital organs. Children are particularly susceptible to the changes in fluid volume and tolerate badly the unpleasant symptoms of hypovolaemia. Overestimation of the dry weight may cause chronic fluid overload and complications such as hypertension, congestive heart failure and pulmonary oedema. An accurate estimation of dry weight in children is particularly difficult because of changes in weight due to growth.

Hence, the aim of this study was to assess is inferior vena cava diameter a useful, simple, non-invasive and reliable method for estimation of fluid status in children on haemodialysis?

This study was conducted on 44 patients , under regular haemodialysis 3 times/week,4 hours per session, on Fresenius 4008B HD machine, using low flux membrane dialyzers chosen based on patient's surface area, (at Pediatric Nephrology and Transplantation Center, Pediatric Hospital, Cairo University) and twenty (20) healthy children were studied as a control group.

The results of this study revealed that:

- The weight post HD is reduced after each session to reach or become near to his dry weight which was estimated previously by the clinical methods.

- Most of our patients were hypertensive at the beginning of the session, but they became normotensive at the end of the session.
- IVCD was found to vary before each session according to volume overload
- IVCD was found to vary during each session (pre, during and post HD).
- IVCD pre HD in the study group was found to vary from IVCD of the control group.
- IVCD post HD in the study group was found to be the same of IVCD of the control group.
- There were significant correlation between both of blood pressure and weight and IVCD all through the HD session (pre, during and post HD).