**Detecting perirenal haematoma in renal transplants with contrast enhanced ultrasound – a systematic review**

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**Abstract:**

**Background**: Routine B mode ultrasound (B-US) is the current standard for early postoperative assessment of the transplanted kidney but has limited efficacy at detecting and assessing perirenal haematomas (PH), especially overtime. We aim to investigate the diagnostic accuracy of contrast enhanced ultrasound (CEUS) in detecting and assessing PH in kidney transplants.

**Method**: Articles were identified using the EMBASE, Medline, Cochrane and Scopus databases. CEUS findings were compared to B-US and biopsy in some instances. CEUS parameters investigated included arrival time of contrast medium and echogenicity/intensity.

**Results**: 2,146 studies were screened of which 4 observational studies were included. PH had heterogeneous contrast medium dynamics on CEUS resulting in increased temporal difference in contrast medium arrival time between the interlobar artery and renal cortex. The resistance index was lower in the PH group compared to the control group. There was a significantly increase in difference of echogenicity/intensity (up to 6 fold) between the PH and renal parenchyma as detected by CEUS compared to B-US. The size of PH was better determined on CEUS whereby lesions on B-US were on average smaller than on CEUS. One study demonstrated B-US with reference to CEUS had a specificity of 100% (95% CI [93.3-100]), sensitivity 47.06% (95% CI [30.16-64.60]) .

**Conclusion**: CEUS can be a method for detection and assessment of PH size, however further studies are required to support CEUS as a superior imaging technique to B-US in evaluating PH.

**Biography of presenting author** (should not exceed 100 words)

Dr. Carlaw has a Doctor of Medicine (MD) degree from University of Sydney in 2019 and a Bachelor of Biomedical Sciences degree (BBiomedSc) from Monash University in 2015. She is currently studying for a Master of Surgery at the University of Sydney. She is interested in General Surgery and is a General Surgery Senior Resident at Westmead Hospital. She has published research internationally in a variety of surgical fields and has presented at national conferences.

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