Introduction

CT angiography is a minimally invasive method of visualising the vascular system and is becoming an alternative to conventional arteriography in some situations. Spiral technology allows a volume of data to be obtained on a single breath-hold with no respiratory misregistration. Fast machines with second or subsecond acquisition times mean the images are obtained while there are high circulating levels of contrast medium giving peak vascular opacification from a peripheral intravenous injection. Accurate timing will ensure either the arterial or venous phase is imaged. Multiple overlapping axial images can be obtained from the data set with no increase in radiation dose to the patient and from these scans computer generated multiplanar and 3D images are obtained which can be viewed from numerous angles. CT angiography can be performed more quickly, less invasively, less radiation dose for patient and staff and at reduced cost compared to conventional angiography **(Rankin, 1998) .**

Computed tomography angiography with multiple detector-row spiral computed tomography (MDCT) is an effective technique for imaging of the renal arteries which allows thin collimation , more rapid acquisition of multiple data sets, making scan times shorter and artifact less likely. **(Pannu and fishman, 2002).**

Helical CT angiography is applicable to a number of indications of conventional angiography. It is mainly used for 1) screening of patients that may have renovascular hypertension that may be amenable to surgical or intraluminal treatment; 2) follow-up of treated patients;

3) preoperative assessment of kidney donors; 4) evaluation of renal artery aneurysms. It is also effective, but only slightly superior to conventional CT, in depicting thrombosis or tumor invasion of renal veins, although it is highly effective in evaluating anatomical variations and renal vein anomalies. In inflammatory vascular disease it is similar to catheter angiography **(Alvarez-Castells et al; 2001).**

Spiral CT angiography is safe and highly accurate in the evaluation of vascular anomalies in potential renal donors .It can demonstrate the number, length and location of renal arteries and it is suggested that spiral CT angiography can potentially replace Conventional digital subtraction renal arteriography (IA-DSA) in the preoperative assessment of renal donors. CT angiography can be the primary technique for this purpose, and invasive angiography be used as a secondary only for problem cases **(Chu et al ; 2001) .**

Multislice spiral CT angiography allows depiction of renal artery aneurysms, and of the precise site, dimensions, CT provides exact measurements of the vessels before and after the aneurysm, which is essential to plan stent-graft implantation. Digital Subtraction Angiography (DSA) cannot provide direct information about the wall of the vessel and about the thrombus; therefore, in some cases it is unable to provide the correct diagnosis **(Piccoli et al; 2003).**

Aim of the essay

To spotlight advantages and limitations of spiral CT angiography in the evaluation of the renal blood vessels.