OUTCOME AND PERFORMANCE OF PERCUTANEOUS CUFFED TUNNELED JUGULAR CATHETER FOR LONG-TERM HAEMODIALYSIS

Thesis

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ABBREVIATIONS

ESRD	:	End stage renal disease
IJV	:	Internal jugular vein
Lt	:	Left
Rt	:	Right
SCV	:	Subclavian vein

ABSTRACT

Cuffed tunneled jugular catheter proved an important alternative vascular access for haemodialysis, when the arteriovenous accesses are exhausted. We conducted a prospective study on 30 patients to evaluate the outcome and performance of this catheter. In this study we describe the percutaneous technique of insertion in the jugular vein and other central veins. The problems and complications were discussed.

Keywords:

Chronic renal failure,
Haemodialysis,
Cuffed tunneled catheter,
Central veins

INTRODUCTION

INTRODUCTION

Chronic renal failure is a complex syndrome consisting of anemia, osteodystrophy, neuropathy, acidosis, and frequently accompanied by hypertension, susceptibility to infection and generalized deterioration in organ function **(Khamis, 2008)**.

Approximately 100 individual per million population reach end stage renal failure each year, the aim of all renal replacement techniques is to mimic the excretory function of the normal kidney, in haemodialysis, blood from the patient is pumped through the dialyser, which bring the blood into close contact with dialysate, flowing countercurrent to the blood **(Kumar and Clark, 2001)**.

One important step before starting regular haemodialysis is preparing a vascular access, which should allow continuous high volumes of blood flow, to maximize the amount of blood cleaned during haemodialysis treatment. The three basic kinds of vascular access for haemodialysis are native arteriovenous fistula, arteriovenous graft and central venous catheter.

Cuffed tunneled haemodialysis catheters (PermCath), were initially developed as a means of short to medium term haemodialysis access; while a more permanent form of access such as an arteriovenous fistula was maturing. The first report demonstrating their effectiveness in this setting was published by Duke University medical center in 1988 **(Shwab *et al.*, 1988)**.

There is a significant and still rising number of haemodialysis patients whom pose serious problems of access creation and maintenance. Easy and quick implantation of central venous catheter

seems to be an alternative to complex and time consuming surgical procedures **(Volker, 2003)**.

In addition, the expedience of using a cuffed haemodialysis catheter has contributed to complacency among nurses and doctors. Opening a haemodialysis port is easier than needling a fistula and inserting a line is often easier than arranging for an arteriovenous fistula or synthetic graft **(Mark** *et al.,* **2001)**.

These catheters are usually constructed of silicon or silastic elastomer, which is much softer and pliable than the material generally, used for acute haemodialysis catheters **(Steve and Gerald, 1999)**.

The right internal jugular vein is seen to be the ideal vein for haemodialysis catheter access. It runs straight down to the superior vena cava which obviously reduces the risk of mal position of the catheter. The left internal jugular vein catheter has to over come two rights angles to make its way down to the superior vena cava. Subclavian vein cannulation is burdened with 10% rate of sever acute complications, therefore, a subclavian haemodialysis access should not be selected as long as other central veins can be punctured **(Volker, 2002)**.

The placement of the haemodialysis catheters is associated with a predictable list of complications including pneumothorax, air embolism, arterial and great vein perforation, nerves and thoracic duct injury, cardiac arrhythmia. Catheter dysfunction and infection are the primary long term complications **(Gerald** *et al.,* **2006)**.

REVIEW OF LITERATURE