"Save the Veins"
Vein Sparing for patients with renal dysfunction

A Did You Know? poster by
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TOPIC OF INTEREST

• The use of venous access devices requiring placement in both central and peripheral veins has become prevalent in modern medicine.

• Peripherally inserted central catheters (PICCs) are vascular access devices that can be inserted through a peripheral vein with the tip terminating in the central vascular system.

• Such catheters are inserted through an antecubital vein by needle puncture (Hertzog & Waybill, 2008).

INTRODUCTION

In many institutions, PICCs replace neck or chest wall central venous catheters as the access of choice for intermediate and long term intravenous therapy (Gonsalves et al., 2003). Larger populations of patients receive these lines, not only for in-hospital use, but home therapy as well (Allen et al., 2000).

A survey tool was developed to identify the nursing knowledge and current clinical practice of the PICC-certified members of the MGH IV Therapy Team related to the patient with renal insufficiency. The information gained from the responses identified a need for education. This is a beginning step in the reduction of the number of PICCs placed in this patient population. IRB Protocol #:2009P000865, SRH

In discussions with the Nephrologists at MGH, there was evidence of hemodialysis patients having PICC placement that oftentimes could have been avoided.

REVIEW OF LITERATURE

The literature revealed factors that contribute significantly to damage of upper extremity vessels:

• diameter, location and composition of the catheters
• presence of disease processes
• infusion solutions
• vein choice
• greater incidence of thrombosis in the presence of chemotherapeutic agents
• Lack of radiological visualization

IMPORTANCE OF AVOIDING PICC LINES IN PATIENTS WITH RENAL FAILURE

• Peripherally inserted central catheters (PICC) have become an essential component in the management of increasing numbers of patients, including patients who require hemodialysis or may, in the future require hemodialysis as a result of renal insufficiency (Allen, 2000).

• Complications from central venous catheters (i.e. septicemia, stenosis, thrombosis) often prevent an optimal vascular access that is critical in this population.

GUIDELINES FOR UPPER EXTREMITY VEIN SPARING

• According to the National Kidney Foundation, veins in both arms could potentially be needed for creation of vascular access at some point in time and must be preserved (National Kidney Foundation [NKF], 2006).

• Due to the large number of End Stage Renal Disease patients receiving hemodialysis, as well as peritoneal dialysis and transplant patients who may require hemodialysis at some point, the need for preservation of upper limb vessels is imperative.

• Arm veins suitable for vascular access placement should be preserved regardless of arm dominance. The cephalic veins of the dominant arm should not be used for either venipuncture or intravenous catheters (NKF, 2006).

The MGH Hemodialysis unit adheres to the NKF-Kidney Disease Outcome Quality Initiative (KDOQI) Clinical Practice Guidelines.

GUIDELINES FOR VENOUS ACCESS IN PATIENTS WITH CHRONIC KIDNEY DISEASE OR RENAL INSUFFICIENCY

Identify –
HD patients, present or future
• CKD stages 3, 4 or 5, including current stage 5 patients receiving hemodialysis, peritoneal dialysis or transplant patients

Plan –
venous access for stages 3-5

Choose –
• dorsal hand veins for phlebotomy
• proximal peripheral venous access if necessary
• internal jugular veins are preferred for central venous access
• external jugular veins are acceptable alternative

Avoid –
• the subclavian veins
National Kidney Foundation, 2006
Upper Extremity Veins are the “Lifeline” for patients with End Stage Renal Disease. As clinicians, we have been charged with the care and preservation of these vessels

OUR PATIENTS’ LIVES DEPEND ON IT!!

WHY IS VEIN SPARING IMPORTANT IN PATIENTS WITH RENAL FAILURE?

- Every patient starts with only four superficial upper extremity veins and two subclavian veins
- Avoiding unnecessary iatrogenic trauma to the upper extremity veins is critical for arterio-venous fistula (AVF) creation.
- Not only are the upper extremity veins critical for the creation of the vascular access, but a healthy venous circuit back to the heart is of equal importance.

A “SAVE THE VEINS” INITIATIVE IS BEING INSTITUTED BY THE HEMODIALYSIS UNIT AND RENAL DIVISION AT THE MGH.

If you are caring for a patient who is wearing a “Save Your Veins” band or you know your patient has renal dysfunction.

Please:

- Contact the patient’s Nephrologist or the Access Coordinator prior to PICC placement
- Avoid antecubital punctures whenever possible
- Perform venipuncture below the wrist for blood draws.
- Contact the MGH Hemodialysis Unit 617-726-3700 if you have any questions

REFERENCES


www.mghpcs.org/IPC/Programs/Committees/Research.asp • March 2011