Improving Adequacy of Hemodialysis

It Takes a Team

FMQAI
Florida Medical Quality Assurance, Inc.

Florida Network 7

What is Adequacy of Hemodialysis ?

- Adequacy of dialysis refers to how well we remove toxins and waste products from the patient’s blood, and has a major impact on their well-being

- When we dialyze a patient, we filter out toxic particles that can affect every organ of their body

How Do We Know if a Patient is Adequately Dialyzed?

- Blood samples are drawn before and after the treatment. The results are compared….this is called the pre and post BUN.

- The lab analyzes the BUN results and performs calculations. These calculations are known as the KT/V and URR.

How Do We Know if a Patient is Adequately Dialyzed?

K/DOQI Guidelines

Define Adequate Dialysis as:

KT/V = 1.2 or greater

URR = 65% or greater

What Does This Mean?

- URR% - Urea Reduction Ratio tells us the percentage of urea removed during the treatment
- KT/V - Formula utilizing dialyzer urea clearance, treatment time and total body fluid

How Do We Know if a Patient is Adequately Dialyzed?

Well-Dialyzed Patients Exhibit the Following:

- Sense of Well Being
- Good Appetite
- More Normal Weight
- Feeling Like Dialysis is not Necessary, Except to Remove Fluid
- More Natural Skin Color

What are the Symptoms of Inadequate Treatment?

Under-Dialyzed Patients May Experi

- Weakness, Tiredness
- Loss of Body Weight
- Poor Appetite
- Nausea / Vomiting
- Feeling Better after Treatmer
- Yellowish Skin Color
- More Infections
- Prolonged Bleeding
- Premature Death

Hemodialysis Prescription Determines Adequacy

- Hemodialysis Prescription Components:
  - Duration of Treatment
  - Dialyzer Urea Clearance (KOA)
  - Blood Pump Speed
  - Dialysate Flow Rate
  - Heparinization
  - Access

The Patient Care Team Can Determine Adequacy

- Check the Prescription Orders Each Treatment for Changes
- Ensure Physician Orders for Hemodialysis Treatment are Followed
- Notify Physician of any Problems Preventing Use of Prescribed Orders

Adequacy of Treatment is Everyone's Concern!

Duration of Treatment

- The longer a patient dialyzes, the more blood flows through the dialyzer, allowing for more cleaning to take place…

Every Minute Counts!

Encourage Your Patients to Complete the

Entire Treatment Time!

Dialyzer Urea Clearance (KOA)

- KOA is a measurement of the dialyzer's ability to remove urea through the pores in the membrane. Urea clearance is determined by the size of the dialyzer membrane and the size and number of pores located in the membrane.

The Larger the Dialyzer, the More Urea Clearance…

Verify You Are Using the Correct Dialyzer Ordered!

Blood Pump Speed

- Also known as Blood Flow Rate…

  Speed of the blood going through the dialyzer membrane for urea removal. The more blood passing through the dialyzer during the treatment…the *More Urea Removed*.

Verify the Blood Pump Speed Matches the Dialysis Prescription!

Patient Should Maintain Prescribe Blood Flow Rate Throughout Dialysis Treatment!

Dialysate Flow Rate

- The Speed which the Dialysate Flows through the Dialyzer.
- The Faster the Dialysate Flows through the Dialyzer ….the *More Urea is Removed.*

Verify Correct Dialysate Flow Setting!

Heparinization

- Keeps the blood from clotting, and blocking the fibers. This allows the blood to flow freely through the fibers of the membrane, and urea can be removed.
- Adequate Heparinization will Prevent Fiber Clotting and*… More Urea is Removed!*

Ensure Correct Heparin Dose is Administered!

Monitor Lines and Dialyzer for Clotting Throughout Treatment!

Vascular Access

- AV Fistula is the Preferred Access
- Adequate dialysis depends on having a vascular access that works well
- Poorly functioning access causes inadequate dialysis and can lead to *premature death*

What Can You Do To Improve Vascular Access Function?

- *Become Proficient in Proper Access Cannulation*
- *Notify Physician if Access has Poor Flow and Request Surgical Evaluation of Access*
- *Thorough Access Assessment Every Treatment*

What Can You Do To Improve Vascular Access Function?

- *Monitor Arterial Pressure for Signs of Inadequate Flow (Negative pressure > -250)*
- *Monitor Venous Pressure for Signs of Excessive Pressure (Venous Pressure > ½ of Blood Flow Rate)*
- *Prompt Physician Notification of Access Problems*

The Patient Care Team Can Determine Adequacy

- Patient Education is KEY to Maintaining Adequate Treatment
- Teach Your Patient About Adequacy

It's About Life!