Adimea = Accurate Dialysis Measurement
User Guide
Continuous Measurement of change in molar concentration

Option for Dialog+® machine generation

Measuring UV-Light Absorbance in spent dialysate

Adimea = Accurate Dialysis Measurement

WARNING
Do not use the Adimea option UV-Kt/V for pediatric patients, since the accuracy of this optional feature has not been proven or validated in the pediatric population.
How Does Adimea Work?

**Adimea® | Technology**

**The Adimea® measurement principle**

Uses the principle of spectroscopy for determining the reduction of urinary excreted substances in the dialysate drain.

- A light source ① transmits ultraviolet light through the dialysate flowing to the drain.
- The particles contained in the dialysate absorb the light depending on the concentration ②.
- This absorption is detected by a sensor ③.

This provides the system with information about the curve of molar reduction in the urea.
Factors That Influence Adequate Dialysis

- **Needle Placement**
  - Machine Settings
    - Blood Flow
    - Dialysate Flow
    - Time

- **Recirculation**

- **Reuse**

- **Bloodline Selection**

- **Dialyzer Size**

- **Needle Size**
Example of Adimea Algorithm to Improve Outcomes

“Entered target Kt/V will not be reached”

Consider arm placement
Consider adjusting needles
Consider flushing or reversing catheter connections

Consider increasing BFR
Consider increasing DFR
Consider increasing treatment time

Consider changing dialyzer size for next treatment
Consult with care team
What are your opinions of a single monthly blood sample as an adequate measurement of dialysis dose?
A single Kt/V value does not tell the whole story!
Adjusting Treatment Parameters

Adimea offers direct control of 3 important clearance influencing factors

Blood flow rate

Dialysate flow rate

Effective dialysis time

Adjustments to treatment parameters during dialysis sessions must be approved by the physician.
Blood Flow Rate

Adimea UV-Kt/V

Increase in blood flow
Improved clearance
More substances in the spent dialysate
Higher light absorption
Positive effect on Kt/V

- Actual treatment curve (including change in treatment parameters)
- Predicted treatment curve without adjustment in treatment parameters
- Kt/V orientation line (Dialog+ screen)
- Target Kt/V
- User intervention time point
Increased Blood Flow and Alarm Turned Off
Blood Flow Rate

Doe, Jane

Jan 25, 2012

Hemodialysis

Bicarb. Running

spKt/V Monitoring

Kt/V

URR

UV-Abs

Patient

Weight [kg] 94.0

Target

Kt/V 1.20

Actual Kt/V: 0.72

Prognosis: 1.11

Target warning ON

Therapy Time [h:min] 04:00

Blood flow [ml/min] 250

Dialysate flow [ml/min] 500
Increased Blood Flow Rate
Extending Dialysis Treatment Time

Longer dialysis time

More time to remove urinary excreted substances

Higher Kt/V at the end of dialysis

- Difference in Kt/V with different treatment durations
- Actual treatment curve (including change in treatment parameters)
- Predicted treatment curve without adjustment in treatment parameters
- Kt/V orientation line (Dialog* screen)
- Target Kt/V
- User intervention time point

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Reducing Blood Flow Rate for Recirculation

Adimea UV–Kt/V

Time (h) 0:00 1:00 2:00 3:00 4:00

Reducing blood flow
Reducing access recirculation
Improved clearance
More substances in the spent dialysate
Higher light absorption
Positive effect on Kt/V

- Actual treatment curve (including change in treatment parameters)
- Predicted treatment curve without adjustment in treatment parameters
- Kt/V orientation line (Dialog® screen)
- Target Kt/V
- User intervention time point
# Recirculation

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<tr>
<th>Doe, Jane</th>
<th>Hemodialysis</th>
<th>Bicarb. Running</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan 25, 2012</td>
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</table>

**spKt/V Monitoring**

- **Patient Weight [kg]**: 112.0
- **Target Kt/V**: 1.40
- **Actual Kt/V**: 0.20
- **Prognosis**: 0.43

**Target warning**: ON

**Therapy Time [h:min]**: 04:00

- **Blood flow [ml/min]**: 350
- **Dialysate flow [ml/min]**: 500
Recirculation—Decreased BFR

Doe, Jane
Jan 25, 2012

Hemodialysis  Bicarb. Running

spKt/V Monitoring

Patient Weight [kg]  112.0
Target Kt/V  1.40
Actual Kt/V: 1.43
Prognosis: 1.43

Target warning  ON

Therapy Time [h:min]  04:00

Blood flow [ml/min]  250
Dialysate flow [ml/min]  500
Graph shows significant recirculation
This graph was taken on a patient who had his arm in a chair. The patient’s arm was repositioned up and out of the chair. Needles were checked for placement and line reversal. Note the sudden upswing at approximately 40 minutes after arm repositioning.
Arm position changed during first 30 minutes of treatment
Catheter Patient

- Patient on a problem catheter
Adimea used in conjunction with the Patient Card Reader provides details at a glance

Go to Adimea by pressing the followed by the icon

<table>
<thead>
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<th>Therapy Date and time</th>
<th>Target Kt/V</th>
<th>Patient Weight (kg)</th>
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<th>Average Blood flow</th>
<th>Average Dialysate flow</th>
<th>Act. URR (%)</th>
<th>Act KT/V</th>
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- The above data for the last 25 patient treatments is stored on the patient card
- Weight gains, access issues and clearance trends can be detected at an early stage
**Kt/V History Utilizing Patient Card**

This function gives the clinician the ability to compare the current Kt/V or URR curve with a history curve of their choice which can be displayed together on the main Adimea screen:

- A list with the previous 12 therapies will appear
- Select “Doctor” icon

- Select the therapy you would like to see on the screen.
- The Kt/V curve of the selected therapy is displayed together with the actual one as a black dashed line (1, below).
- Also possible with URR and UV absorbance curves.
Questions

For additional clinical resources please visit us online at:

www.BBraunUSA.com/Clinical
Thank you for your time