

Product insert

Citralysate K4

1. Treatment indication

Citralysate K4 is a dialysis solution for continuous venous-venous hemodialysis (CVVHD) with citrate anticoagulation by means of the anticoagulation solution of trisodium citrate 4% together with concurrent calcium administration. Citralysate K4 can be used only on devices designated for continuous hemodialysis equipped with a module for citrate anticoagulation and with pumps for citrate and calcium infusion next to standard pumps for blood flow operation, dialysis solution and filtrate.

2. Composition

Citralysate K4 is delivered as a double-chamber bag with a total volume of 5000ml. Dialysis solution for an immediate use is made by mixing contents of both bag compartments just before use. The smaller chamber contains 250 ml of acid solution with 15 mmol/l Mg^{+} , 80 mmol/l K^{+} , 112 mmol/l Cl^{-} , H^{+} - with excess of 2,0 mmol/l (corresponding to pH around 2,7) and 111 mmol/l of dextrose. The larger chamber contains 4750 ml of solution with 140 mmol/l Na^{+} , 118,84 mmol/l Cl^{-} and 21,16 mmol/l HCO_3^{-}

Dialysis solution for an immediate use contains:

Sodium chloride	6,604 g/l
Sodium hydrogencarbonate	1,680 g/l
Potassium chloride	0,2982 g/l
Magnesium chloride x 6 H ₂ O	0,1525 g/l
Dextrose monohydrate	1,100 g/l

Other components:

Water for injection	
Hydrochloric acid	25%

Ions and dextrose concentration in the dialysis fluid for immediate use are:

Na^{+}	133,0	mmol/l
K^{+}	4,0	mmol/l
Mg^{++}	0,75	mmol/l
Cl^{-}	118,5	mmol/l
HCO_3^{-}	20,0	mmol/l
Anhydrous dextrose	1,0	g/l
pH	~	7,4
Theoretic osmolarity	>=	278,0 mosmol/l

3. Directions for use:

User shall be duly instructed by the manufacturer on the proper application of Citralysate K4 before its use. During its use other additional devices and solutions are needed and the solution of trisodium citrate 4% shall be administered via infusion in pre-dilution. The ratio of this 4% solution to that of blood flow under the standard conditions should be 1:34, which corresponds to an infusion of 4 mmol of citrate per 1 liter of blood treated. Solution of calcium with its concentration within 50 a 500 mmol/l shall be administered via system infusion or via venous CVVHD blood set just before connecting to venous catheter's lumen. Calcium amount administered via infusion shall be set appropriately for the concentration of system ionized calcium to be controlled. Appropriate initial dose is routinely 1,7 mmol Ca per 1 liter of applied dialysis solution. If Citralysate K4 is injected at a rate of 2 l/h, it corresponds to 3,4 mmol Ca infused in an hour.

Metabolic acidobasic state of the patient can be controlled by the ratio between buffer infusion depended on the blood and citrate flows and buffer removals via a flow of dialysis solution. Increased flow of dialysis solution which may lead to acidosis shall be taken into account. This is what distinguishes it from other dialysis solutions used in CVVHD combined with system anticoagulation (e.g. 35 mmol/l bicarbonate). If Citralysate K4 is injected at a rate of 2 l/h together with a blood flow rate of 100 ml/min, a routine balanced metabolic state can be achieved. This holds if an adequately big dialyzer not restricting transport of buffers has been used.

4. Continuous hemodialysis dosage

If it is not clinically contraindicated, the required efficacy of hemodialysis treatment is achieved by administering 1,5 - 2,5 l/h of dialysis solution in adults, depending on the body weight. No experience with treatment in children has been obtained to date.

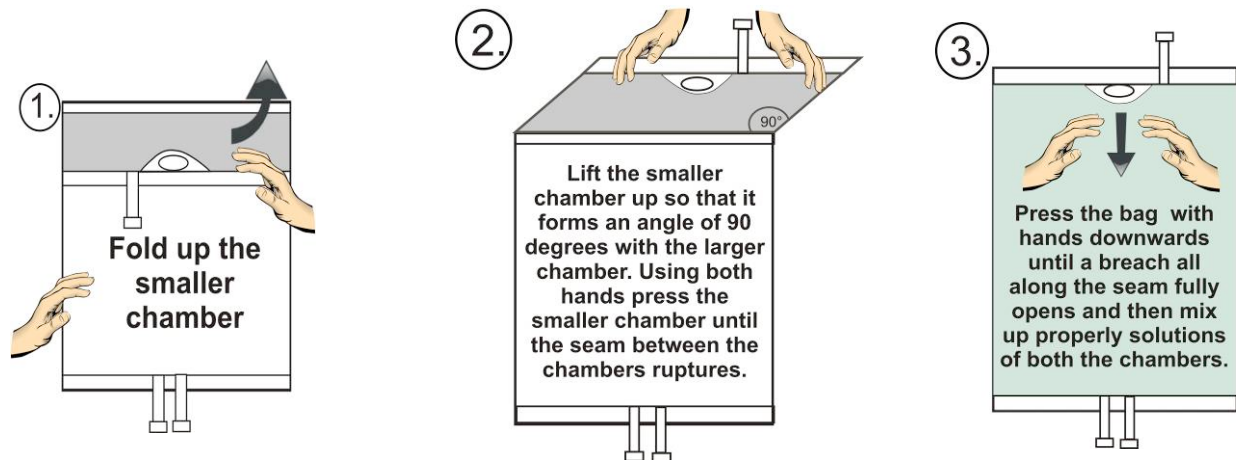
5. Handling

Container's opening:

Double-chamber bag containing dialysis solution shall be taken out from the cardboard just before use. Before mixing up their contents check up its composition, batch number and expiry date. Check up the solution for its clarity. Check up the bag and outlet safety lock for their integrity. Solution shall not be used if container or outlet safety lock has been tampered.

Instruction for mixing both the chambers:

Contents of both the chambers shall be mixed up just before use of dialysis solution.



Upon mixing up the contents of both the chambers check up if the seam has been entirely opened, the solution is clear and no liquid is leaking.

Citralysate K4 shall be used within 48 hodin after mixing.

6. Bag connection to extracorporeal circuit

After mixing up contents of both the chambers the bag with the dialysis solution is connected to the dialysate circuit according to instructions for devices designated for continuous renal replacement therapies. It is necessary to avoid contaminations of the dialysis solution and any parts being in contact with the dialysis solution. The bag with Citralysate K4 disconnected from the dialysate circuit should be disposed of.

Citralysate K4 shall be administered neither intravenously, nor infused into extracorporeal circuit.

Before its use Citralysate K4 shall be warmed up closely to the patient's body temperature for it not to be substantially decreased.

Notes

Dialysis solution for citrate CVVHD in a double-chamber bag.

- Do not use before mixing up both the chambers.
- Dialysis solution shall be used only combined with citrate infusion (citrate anticoagulation).
- Dialysis calcium-free solution: a separate calcium infusion is necessary.
- Connection of system citrate CVVHD shall be carefully checked up before the treatment initiation. Incorrect connection of citrate and calcium infusion shall be avoided above all. Correct connection should be approved by measuring a decrease of ionized calcium concentration induced with citrate in extracorporeal circuit within 20-30 min after the therapy initiation, at the latest. If such a decrease does not take place, it is necessary to check up the connection, because a changeover of citrate and calcium infusions may lead to an electrolytes' serious dysbalance.
- Make use of high-flux dialyzer with minimum area of 1,4 m² a exchange it each 72 hours, at least.
- Citrate impaired metabolism like in patients with impaired liver functions may lead to acidosis, hypocalcemia or an increased need for calcium substitution. In such a case citrate CVVHD shall be discontinued and another therapy of renal replacement should be applied. Efficacious CVVHD therapies may bring about hypophosphatemia. Phosphate levels in serum should be therefore monitored before and during the treatment and phosphate depletion should be compensated.
- Steam sterilized.
- Free of bacterial endotoxins.
- Store at the temperature within 4°C and 25 °C.
- Expiry date: see information on the label.
- Only for single use.

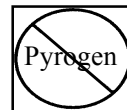
7. Information on packagings' disposal:

The product is recommended to be considered potentially hazardous waste.

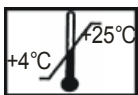
Symbols stated on the container:



Caution to follow insert information



Pyrogen-free solution



Storing temperature: from +4 to +25°C



Not to be used repeatedly



Steam sterilization

0 mmol/l Ca²⁺

Producer: Biomedica, spol. s r.o., Pekařská 8, 155 00 Praha 5

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