SUMMARY OF PRODUCT CHARACTERISTICS

1. NAME OF THE MEDICINAL PRODUCT

POLİFLEKS 3% HYPERTONIC SODIUM CHLORIDE SOLUTION FOR I.V. INFUSION

Hypertonic solution for intravenous administration.
Sterile.

2. QUALITATIVE AND QUANTITATIVE COMPOSITION

Active ingredients:

Each 100 ml solution contains 3,0 g sodium chloride.

Ion concentrations in the solution:
− Sodium: 513 mEq/l
− Chloride: 513 mEq/l

Osmolality: 1027 mOsm/liter

Excipients:

See section 6.1 for excipients.

3. PHARMACEUTICAL FORM

Sterile, clear, colorless solution for intravenous infusion.

4. CLINICAL PARTICULARS

4.1. Therapeutic indications

In cases of hypernatremia and hypochloremia depending on treating liquid-electrolyte losses with solutions not containing sodium.

In case taking over hydration and excessive dilution of the body fluid depending on this because of frequent enema or because the irrigation liquids used in the transurethral prostate resection enters the circulation from the venous sinuses opened.

For the emergent treatment of serious salt losses depending on excessive sweating, vomiting, diarrhea, and other reasons.

4.2. Posology and method of administration

Posology

100 ml in a time longer than one hour.

In order to be able to continue treatment, the plasma electrolyte concentrations, also contains chloride and bicarbonate levels, must be measured.

Administration method:

It is used intravenously.

Additional information related with special populations:

Renal/hepatic impairment: There is no knowledge on the usage in the renal / liver failure.

Pediatric population: There is no knowledge on the usage in the children.

Geriatric population: It must be used with care for elderly.

4.3. Contraindications

It must not be used for the patients who sodium and chloride usage is contraindicated. Using hypertonic sodium chloride solutions is contraindicated in cases where the serum electrolytes increase is normal or the decrease is very little.

4.4. Special warnings and precautions for use

- A careful clinic follow up is required at the beginning of all intravenous infusions. The administrations must be conducted under a regular and careful observation. Clinical and biological parameters, especially serum electrolyte levels, liquid balance and acid-base balance must be monitored.

- Hypertonic solutions must be applied preferably by a big vein. In order to decrease the thrombophlebitis probability, the vein where administration is made, must be replaced once 24 hours.

- Hypertonic solutions may cause irritation in the veins and local vascular lesions. This condition may be prevented by selecting a big vein for the administration and making the administration with a slow speed.

- For the patients suffering from decompensate congestive heart failure, who have urinal tract plugging or have a probability of which is high, for the ones with hypertensions, for the patients with edema and for the patients the treatment is applied with corticosteroids or corticostimulants, a careful usage is required.

- The sodium retention risk increases for the patients the renal function of which is impaired. Because of this, it is required that the liquid condition is monitored regularly for the patients to whom 3% sodium chloride solution is administered and who have serious renal dysfunction.

- Electrolyte concentration of the patients must be regularly monitored.
- For the other sodium retention conditions, the liquid balance, electrolyte levels and acid – base balance must be monitored clinically and with periodical laboratory examinations in the serious renal failure and for the patients who have liver cirrhosis.

- A partial usage is required for the geriatric or postoperative patients.

- Because administration of hypertonic solutions with excessive speeds or administering them in excessive amounts, especially for the ones who have bad physical condition and who are chronic alcoholic, may cause severe neurological effects (central pontine myelinolysis – osmotic demyelinolysis), care must be given that the sodium level in the blood is not over 130 mEq/liter.

- Care must be given and the patient must be continuously monitored during usage for not forming pulmonary edema.

- Giving sodium chloride more than required intravenously may cause hypokalemia and acidosis. Because of this, it must not be administered to the patients who have hypokalemia and acidosis. Hypertonic sodium chloride solution may cause water and electrolyte loading or both simultaneously. Volume increase may cause congestive heart failure, lung edema and hypertension. Acute hypokalemia may make subdural and subarachnoid bleeding. The solution leaking to the vein walls or tissues during injection may cause vein or tissue necrosis and thrombophlebitis. If sodium chloride is given with high amounts, since the chloride ion may replace bicarbonate, acidosis because of decrease in the bicarbonate reserves may occur.

- Excessive electrolyte loss which may occur during long term nasogastric sucking, vomiting, diarrhea, or gastrointestinal fistula drainage may cause a requirement for additional electrolyte support.

- Additional essential electrolytes, minerals and vitamins may be administered, when required.

- In order to minimize the risk of possible incompatibilities which may be anticipated, caused by mixing the sodium chloride solution with other additives, it must be observed whether there is blurriness or precipitation just after the mixing of the final infuscate, before the administration and during the periodical administration.

- If the administration is controlled with a pumping device, care must be given that the pumping is stopped first because of the probability of the plugging of the vessel or formation of the air emboli. If the administration is not controlled with a pumping device,

it must be avoided that high pressure (>300 mmHg) is applied, which may cause defects in the vessel such as wetting or twisting. For example, manual intervention may cause breaking of the vessel.

- The intravenous administration of these solutions is made by using sterile equipment. It is recommended that intravenous administration apparatus are replaced at least once every 24 hours.

- Use only if the solution is clear and vessel and seals are solid.

4.5. Interaction with other medicinal products and other forms of interaction
There is no known medicine interaction. Injecting another medicine in the solution is not recommended unless it is necessary. Care must be given that the medicine added during a necessary addition is stable in the pH of the solution and it is compatible with the materials inside the solution and this decision must be given by the physician.

Careful usage is required in order to avoid hypertension and excessive water retention in the patients to whom treatment is applied with corticosteroid or corticostimulants.

4.6. Pregnancy and lactation
General recommendation
Pregnancy category: C

Women of childbearing potential / Contraception
No special condition was notified related with the usage in this group of patients.

Pregnancy
There is no adequate information on the usage of POLİFLEKS 3% HYPERTONIC SODIUM CHLORIDE in pregnant women.

The studies made on animals are inadequate with regards to the pregnancy /and-or/ embryonic/fetal development /and-or/ childbirth /and-or/ development after birth (see chapter 5.3). The potential risk for humans isn't known. It must not be used in pregnant women other than the cases where the patient cannot be cured with another dialysis method.

It must not be used during pregnancy period unless it is considered as absolutely necessary by the doctor.

Lactation
There is no known adverse effect. Since breastfeeding with high sodium content may cause neonatal hypernatremia dehydration, it must not be used during lactation period unless it is very necessary.

Reproduction ability / fertility
There is no adverse effect known.

4.7. Effects on ability to drive and use machines
It has no known effect to vehicle and machine usage.

4.8. Undesirable effects
Very common (≥1/10); common (≥1/100 to <1/10); uncommon (≥1/1,000 to <1/100); rare (≥1/10,000 to <1/1,000); very rare (<1/10,000), unknown (it cannot be progressed with the data on hand).

Blood and lymphatic system disorders
Unknown: Widespread intravascular coagulopathy

Metabolism and nutrition disorders
Unknown: Water retention and edema; intensification in congestive heart failure; acidosis.
Very rare: Hypernatremia, excessive dehydration

Nervous system disorders
Unknown: Headache, dizziness condition, uneasiness condition, irritation, convulsion, hemorrhagic encephalopathy, delirium, coma and death.

Cardiac disorders
Unknown: Tachycardia, congestive heart failure.

Vascular disorders
Unknown: Peripheral edema; Hypertension; Hypotension
Rare: Fleabite, leakage out of the vein, hypervolemia
Very rare: venous thrombosis

Respiratory, thoracic and mediastinal disorders
Unknown: Dyspnea

Gastrointestinal disorders

Unknown: Nausea, vomiting, diarrhea; cramps in the abdomen; feeling of thirst; decrease in saliva secretion; bloody vomiting.

Skin and subcutaneous tissue disorders

Unknown: Decrease in sweating.

Musculoskeletal and connective tissue disorders

Unknown: Twitch and hardening in the muscles.

Renal and urinary disorders

Unknown: Oliguria; renal failure.

General disorders and administration site conditions

Unknown: Fever; fatigue; infection in the injection region; local pain and venous irritation in very fast infusion.

Surgical and medical procedures

Unknown: Infection in the injection region; venous thrombosis and fleabite development spreading by starting from the region where injection is applied; leakage out of the vein.

4.9. Overdose and treatment

When using the hypertonic solutions, there is the risk of an increase in the extracellular volume. This may result in hypernatremia. Among the symptoms of overdose are hemorrhagic encephalopathy, blood vomiting and weakness, being thirsty, decrease in saliva secretion, fever, dizziness, delirium, breathing difficulties, convulsions, hemifarazi, positive Babinski, lethargy, coma, oliguria, tachycardia, and hypotension.

Diuretics may be used for the treatment of overdose if the kidney functions are normal. Hypernatremia treatment is adjusted based on water balance of the patient. Urine osmolality and ion concentrations in the plasma must be checked regularly. If the kidney functions are impaired, dialysis may be applied. Water is decreased and diuretics are applied for the hypervolemia patients. Blood sodium is diluted by hypotonic solutions and it is ensured that the excess sodium is eliminated by using diuretics such as furosemide for the normovolemic and hypovolemic patients.

Especially for the ones with a bad physical condition and have chronic alcoholism, because administering hypertonic sodium chloride too fast or giving it in excessive amounts may cause severe neurological effects (central pontine myelination – osmotic demyelination), care must be given that the sodium level in the blood is not higher than 130 mEq/liter.

5. PHARMACOLOGICAL PARTICULARS

5.1 Pharmacodynamics properties

Pharmacotherapeutic group: Solutions effecting electrolyte balance
ATC code: B05XA03
Sodium chloride solutions are closely related with the extracellular fluid composition of the body. Hypertonic sodium chloride solutions have an important role in the severe salt deficiencies where fast electrolyte regulation is required. 'Low salt syndrome' is observed in heart failure, renal failure, during and after the surgeries. In these cases, frequently, chloride loss is more than sodium loss. Chloride is the major anion of the extracellular fluid and together with sodium it causes that the acid – base balance is deteriorated. It can be seen in the conditions progressing with excessive dehydration depending on severe salt decrease, sweating, vomiting, diarrhea, and other conditions.

The administration of hypertonic sodium chloride solutions may be required in the cases of high dilution of plasma depending on excessive water intake.

5.2. Pharmacokinetic properties

POLİFLEKS 3% HYPERTONIC SODIUM CHLORIDE is a solution suitable for intravenous application, sterile, stable, and apyrogen. It contains no bacteriostatic materials.

Its osmolality is 1027 mOsm/liter.

The sodium and chloride, administered to the body through vascular access, follows the routes followed by the sodium and chloride which are the normal cation and anion of the body and dispersed in the extracellular fluid and intracellular liquid. The excess amount is eliminated through urine and by the body secretions like sweat and saliva etc.

Absorption:
Just after the intravenous administration, sodium and chloride reach the highest levels in the blood.

Distribution:
Sodium and chloride taken with POLİFLEKS 3% HYPERTONIC SODIUM CHLORIDE are subjected to the same distribution with the endogenous sodium and chloride.

Biotransformation:
Sodium and chloride taken with POLİFLEKS 3% HYPERTONIC SODIUM CHLORIDE are subjected to the same biotransformation with the endogenous sodium and chloride.

The half-life of sodium marked radioactively ($_{24}Na$), after injection, is 11 – 13 days for 99% of the sodium and one year for the remaining 1%.

Chloride closely follows the sodium metabolism and the changes in the acid – base balance of the body is reflected with the changes happening in the chloride concentration.

Elimination:
Sodium and chloride taken with POLİFLEKS 3% HYPERTONIC SODIUM CHLORIDE are eliminated with the same way with the endogenous sodium and chloride.

Sodium is mainly eliminated through renal route but at the same time, a big majority is re-absorbed through renal route. A small amount of sodium is eliminated with feces and sweat.

Because chloride follows sodium metabolically, it is mainly eliminated through renal route and a small amount with feces and sweat.

5.3. Pre-clinic reliability data
There is no study made on this subject.

6. PHARMACEUTICAL PARTICULARS
6.1. List of excipients
Water for injection

6.2. Incompatibilities
In cases where additional medicine is used, it must be checked whether there is incompatibility or not.

6.3 Shelf-life
24 months.

6.4. Special precautions for storage
It must be stored in room temperature under 25°C.

This medicinal product is intended for intravenous administration only with sterile devices.Each infusion bag is designed for **single use**. Once opened, unused part should be discarded.

Use according to the expiry date.
If you notice disorders in the product and/or its package, do not use POLİFLEKS 3% HYPERTONIC SODIUM CHLORIDE

6.5. Nature and contents of the container
It is presented in PVC and PP bags of 100, 150, 250, 500 and 1000 ml. There are two forms: with set and without set

6.6. Demolition of the materials remained from human medical products and other special precautions

- The solution must not be used if it is not clear.
- The bag must not be holed.
- In order to prevent air emboli which may occur depending on the remained air in the bag, no serial connection must be made with other infusion liquids.
- If additional medicine application will be made, the isotonicity of the final product formed must be determined before parenteral administration is made. It is required that any medicine addition procedure is made with care and the solution is thoroughly mixed with the medicine added under aseptic conditions.
- It is for single usage
  Unused products or waste materials must be disposed in accordance with "Medical Waste Control Regulation" and "Regulation on Control of Packaging and Packaging Waste".

1. Opening the bag

- Remove the external protector just before the usage.
- Check whether the bag inside the protective package is solid or not by squeezing after it is removed from the protective package. If there is leakage found, the product must not be used; its sterility may be spoiled.
- Parenteral medicine must be checked by eyes before usage; only clear products without particles and the integrity of the package of which is not damaged must be used.

2. Preparation for administration

− Hang the bag by the holed part on it.
− Remove the protective cap at the administration point.
− Attach administration set to the bed by firmly inserting the spike of the administration set to the administration point.

The usage directive of the set must be followed for administering the solution to the patient.

3. Adding additional medicine:

Caution: All substances to be added to the product should be incompatible with the product, like for all parenteral solutions. If adding will be made to the product, the incompatibility should be checked in the final mixture before administering the patient.

Adding medicine before application

- The medicine administration edge is disinfected.
- The medicine to be added is added inside the bag with an injector which has a needle with a thickness of 19 – 22 gauge.

- Solution and the medicine added inside is mixed thoroughly. It is ensured that the medicine is mixed by slightly tapping to the administration exit when it is up position for the dense drugs like potassium chloride.

Attention: The bags additional drug is applied inside should not be stored.

Adding medicine during administration

- Clamp of the set is closed.
- The medicine administration edge is disinfected.
- The medicine to be added is applied from the medicine administration edge with an injector which has a needle with a thickness of 19 – 22 gauge.
- The solution is removed from the hanger and turned upside down.
- It is ensured that the medicine is mixed by slightly tapping to the administration exit and injection input of the bag when it is in this position.
- The bag is brought to the old position; clamp is opened and administration is continued.

7. MARKETING AUTHORISATION HOLDER

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