SUMMARY OF PRODUCT CHARACTERISTICS

1. NAME OF THE MEDICINAL PRODUCT

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

Sterile.

2. QUALITATIVE AND QUANTITATIVE COMPOSITION

Active substance :

Each 100 ml solution contains 3.0 g sodium chloride.

Ion concentrations in the solution:

− Sodium: 513 mEq/l

− Chloride: 513 mEq/l

Osmolality: 1026 mOsm/liter

Excipients:

See section 6.1 for excipients.

3. PHARMACEUTICAL FORM

Sterile, clear, colorless solution.

Solution for 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

- 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.
- 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.

4.5. Interaction with other medicinal products and other forms of interaction

There is no known medicine interaction.

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 PF 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).

Metabolism and nutrition disorders

Unknown: Water retention and edema; intensification in congestive heart failure; acidosis.

Nervous system disorders

Unknown: Headache, dizziness, uneasiness, irritation, convulsion, hemorrhagic encephalopathy, delirium, coma and death.

Cardiac disorders

Unknown: Tachycardia

Vascular disorders

Unknown: Peripheral edema; Hypertension; Hypotension

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. Among the symptoms of overdose are hemorrhagic encephalopathy, blood vomiting and weakness, being thirsty, decrease in saliva secretion, fever, dizziness, delirium, oliguria, tachycardia, and hypotension.

Diuretics may be used for the treatment of overdose if the kidney functions are normal. Urine osmolality and ion concentrations in the plasma must be checked regularly. If the kidney functions are impaired, dialysis may be applied.

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

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

Its osmolality is 1026 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 PF 3% HYPERTONIC SODIUM CHLORIDE are subjected to the same distribution with the endogenous sodium and chloride.

Biotransformation:
Sodium and chloride taken with PF 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 PF 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.

If you notice disorders in the product and/or its package, do not use. Remained solution must not be used after the bottle is opened. (see Section 6.6.)

6.5. Nature and contents of the container
Glass bottles of 500 ml and 1000 ml.

6.6. Demolition of the materials remained from human medical products and other special precautions
Unused medicines should be discarded in accordance with the local regulations!

Details for use:
Solution should be inspected visually before use.
The administration is by intravenous route with sterile, apyrogen sets.

Only products that are clear, particle-free and intact in packaging integrity should be used.

The administration should be started as soon as possible after the application set is attached to the product.

In order to prevent an air embolisation that may occur due to the residual air in the bottle, no serial connection should be made with other infusion fluids.

The solution should be applied using the aseptic technique through the sterile application set. In order to prevent air from entering the system, liquid must be passed through the application set before use.

Additional medication may be added before and during infusion with the aid of Injection a needle in aseptic conditions. The final product's isotonicity should be determined before parenteral administration.

The added drug must be completely mixed with the solution before application to the patient. Solvents containing additional drug should be used immediately after drug addition; it should not be stored for later use.

Addition of additive or wrong application technique may result in a fever reaction due to pyrogen contamination of the product. If an adverse reaction occurs, the infusion should be terminated immediately.

For single use only.
Do not store partly used solutions.
Do not reconnect partly used bottles to the administration systems.

Addition of additional drug:
Attention: As with all parenteral solutions, all substances to be added to the product must be compatible with the product. If an addition is to be made, compatibility should be checked in the final mixture before administration to the patient.

Adding medication before administration
1. Stopper of the bottle is disinfected.
2. Inject the drug to be added to the bottle by using syringe with 19 to 22 gauge needle.
3. Mix the solution and the added drug thoroughly.

Attention: Do not store the bottles which mixed with additional medication.

Adding medication during administration
1. Close the clamp.
2. Stopper of the bottle is disinfected.
3. Inject the drug to be added using syringe with 19 to 22 gauge needle.
4. Remove the solution from the hanger and invert.
5. In this position, tap gently the bottle to allow mixing of solution and medication.
6. Return the bottle to its former position and open the clamp and continue administration.

7. MARKETING AUTHORISATION HOLDER
POLİFARMA İLAÇ SAN. VE TİC. A.Ş.
Vakıflar OSB Mahallesi No:22/1, Ergene/Tekirdağ/TURKEY
Tel: +90 282 675 14 04
Fax: +90 282 675 14 05

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209/93

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Date of First Authorisation: 04.12.2006
Renewal of Authorisation: 18.08.2016

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01.10.2019