PACKAGE INSERT, KABIPAC @ 500 ML

Volulyte 6%

Solution for Infusion

COMPOSITION

1000 ml solution for infusion contain:

Poly (O-2-hydroxyethyl) starch - Molar substitution: 0.38 – 0.45 - Mean molecular weight: 130,000 Da (manufactured from waxy maize starch)	60.00 g
Sodium acetate trihydrate	4.63 g
Sodium chloride	6.02 g
Potassium chloride	0.30 g
Magnesium chloride hexahydrate	0.30 g
Electrolytes :	
Na^+	137.0 mmol/l
K^+	4.0 mmol/l
Mg^{++}	1.5 mmol/l
Cl^-	110.0 mmol/l
CH_3COO^-	34.0 mmol/l
Theoretical osmolarity :	286.5 mosm/l
Titratable acidity :	<2.5 mmol NaOH/l
pH	5.7 – 6.5

List of excipients

Sodium hydroxide (for pH adjustment)
Hydrochloric acid (for pH adjustment)
Water for injections

PHARMACEUTICAL FORM

Solution for infusion.

A clear to slightly opalescent solution, colourless to slightly yellow.

CLINICAL PARTICULARS

Therapeutic Indications

In case of hypovolaemia a crystalloid solution should first be given. Hydroxyethyl starch (HES) is indicated for the treatment of hypovolaemia if the patient does not respond to crystalloid solutions.

Posology and method of administration

For continuous intravenous use as infusion.

The first 10 – 20 ml should be infused slowly and under careful monitoring of the patient so that any anaphylactic/anaphylactoid reaction can be detected as early as possible.

The daily dose and rate of infusion depends on the patient's blood loss, on the maintenance or restoration of haemodynamics and on the haemodilution (dilution effect).

Adult dose:
Up to 50 ml of Volulyte per kg of body weight per day (equivalent to 3.0 g hydroxyethyl starch, 6.85 mEq sodium and 0.2 mEq potassium per kg of body weight). This is equivalent to 3,500 mL Volulyte for a 70 kg patient.

Volulyte can be administered repetitively over several days according to the patient's needs. The duration of treatment depends on the duration and extent of hypovolaemia and shock, the haemodynamics and on the haemodilution.

Paediatric population :
Data are limited in children, therefore it is recommended not to use HES products in this population.

For handling instructions please refer to section **Special precautions for disposal and other handling.**

Contraindications

Do not use hydroxyethyl starch (HES) products in

- critically ill adult patients including patients with sepsis due to increased risk of mortality and renal replacement therapy
- patients with severe liver disease
- patients with known hypersensitivity to hydroxyethyl starch
- Clinical condition where fluid overload (hyperhydration) is a potential problem, especially in cases of pulmonary oedema and congestive cardiac failure.
- patients with pre-existing coagulation or bleeding disorders
- patients with renal failure with oliguria or anuria not related to hypovolaemia
- patients receiving dialysis treatment
- patients with severe hyperkalaemia, severe hypernatraemia or severe hyperchloraemia
- patients with intracranial bleeding

Special warnings and precautions for use

Volulyte is not a subtitute for red blood cells or coagulation in plasma.

Immune system:
Anaphylactic/anaphylactoid reactions (hypersensitivity, mild influenza-like symptoms, bradycardia, tachycardia, bronchospasm, non-cardiac pulmonary edema) have been reported with solutions containing hydroxyethyl starch.

If a hypersensitivity reaction occurs, administration of the drug should be discontinued immediately and the appropriate treatment and supportive measures should be undertaken until symptoms have resolved (see section **Undesirable Effects**).

Renal function:
Avoid use in patients with pre-existing renal dysfunction.

Discontinue use of Volulyte 6% at the first sign of clinically relevant renal injury.

Continue to monitor renal function in hospitalised patients for at least 90 days as use of renal replacement therapy has been recorded up to 90 days after administration of HES products.

Bleeding disorders:
With the administration of Volulyte 6%, disturbances of blood coagulation beyond dilution effect can occur depending on the dosage.

Administration of large volumes of hydroxyethyl starch may transiently alter the coagulation mechanism and decrease hematocrit and plasma proteins due to hemodilution.

Discontinue Volulyte at the first sign of clinically relevant coagulopathy. Be vigilant concerning coagulation status in patients undergoing open heart surgery in association with cardiopulmonary bypass.

Fluid overload:
Volume overload due to overdose or too rapid infusion must always be avoided in general, particularly for patients with cardiac insufficiency or kidney dysfunctions. The increased risk of hyperhydration must be taken into consideration; posology must be adapted.

Fluid status and rate of infusion should be assessed regularly during treatment, especially in patients with cardiac insufficiency or severe kidney dysfunction.

Dehydration:
In cases of severe dehydration a crystalloid solution should be given first. Generally, sufficient fluid should be administered in order to avoid dehydration.

Electrolyte disturbances:
Particular care must be taken in patients with electrolyte abnormalities like hyperkalemia, hypernatremia, hypermagnesemia, and hyperchloremia.

In metabolic alkalosis and clinical situations where alkalisation should be avoided, saline based solutions like a similar product containing HES 130/0.4 in 0.9 % sodium chloride solution should be preferred over alkalising solutions like Volulyte 6%.

Monitoring – Laboratory Tests:
Clinical evaluation and periodic laboratory determinations are necessary to monitor fluid balance, serum electrolyte concentrations, kidney function, acid-base balance, and coagulation parameters during prolonged parenteral therapy or whenever the patient's condition warrants such evaluation.

Hepatic/Biliary/Pancreatic:
Serum amylase level can rise during administration of hydroxyethyl startch and can interfere with the diagnosis of pancreatitis. The elevated amylase is due to the formation of an enzyme-substrate complex of amylase and hydroxyethyl starch subject to slow elimination and must not be considered diagnostic of pancreatitis.

Monitor liver function in patients receiving HES products, including Volulyte 6%.

Skin:
Pruritus is a known complication of administration of hydroxyethyl starches, though it is typically more common with prolonged use of high doses.

HES-induced pruritus may be delayed in onset, typically one to six weeks after exposure, may be severe and may be of protracted (weeks and months) persistence. It is generally unresponsive to therapy.

Paediatric population:
Data are limited in children, therefore it is recommended not to use HES products in this population.

Interaction with other medicinal products and other forms of interaction
No interactions with other drugs or nutritional products are known to date.

Consideration should be given to the concomitant administration of medicinal products that can cause potassium or sodium retention.

Please refer to section **Undesirable effects.**

Pregnancy and lactation

For Volulyte no clinical data on exposed pregnancies are available.

There are limited clinical study data available from the use of a single dose of HES 130/0.4 (6%) in pregnant women undergoing caesarean section with spinal anesthesia. No negative influence of HES 130/0.4 (6%) in 0.9% sodium chloride on patient safety could be detected; a negative influence on the neonate could also not be detected (see section Pharmacodynamic properties).

Animal studies with a similar product containing HES 130/0.4 in 0.9 % sodium chloride solution do not indicate harmful effects with respect to pregnancy, embryo/fetal development, parturition or postnatal development (see section **Preclinical safety data**). No evidence of teratogenicity was seen.

Volulyte should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

It is unknown whether hydroxyethyl starch is excreted in human breast milk. The excretion of hydroxyethyl starch in milk has not been studied in animals. A decision on whether to continue/discontinue breast-feeding or to continue/discontinue therapy with Volulyte should be made taking into account the benefit of breast-feeding to the child and the benefit of Volulyte therapy to the woman.

Effects on ability to drive and use machines

Volulyte has no influence on the ability to drive and use machines.

Undesirable effects

The undesirable effects are divided into: *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), frequency not know (cannot be estimated from available data).*

Hepatobiliary disorders
Frequency not known (cannot be estimated from available data): Hepatic injury.

Renal and urinary disorders
Frequency not known (cannot be estimated from available data): Renal injury.

Blood and lymphatic system disorders
Rare (in high doses): With the administration of hydroxyethyl starch disturbances of blood coagulation can occur depending on the dosage.

Immune system disorders
Rare: Medicinal products containing hydroxyethyl starch may lead to anaphylactic/anaphylactoid reactions (hypersensitivity, mild influenza-like symptoms, bradycardia, tachycardia, bronchospasm, non-cardiac pulmonary oedema). In the event of an intolerance reaction occurring the infusion should be discontinued immediately and the appropriate emergency medical treatment initiated until symptoms have resolved.

Skin and subcutaneous tissue disorders
Common (dose dependent): Prolonged administration of high dosages of hydroxyethyl starch may cause pruritus (itching) which is a known undesirable effect of hydroxyethyl starches.

The itching may not appear until weeks after the last infusion and may persist for months.

Investigations
Common (dose dependent): The concentration of serum amylase can rise during administration of hydroxyethyl starch and can interfere with the diagnosis of pancreatitis. The elevated amylase is due to the formation of an enzyme-substrate complex of amylase and hydroxyethyl starch subject to slow elimination and must not be considered diagnostic of pancreatitis.

Common (dose dependent): At high dosages the dilution effects may result in a corresponding dilution of blood components such as coagulation factors and other plasma proteins and a decrease of hematocrit.

Overdose

As with all volume substitutes, overdose can lead to overloading of the circulatory system (e.g. pulmonary oedema). In this case the infusion should be stopped immediately and if necessary, a diuretic should be administered.

PHARMACOLOGICAL PROPERTIES

Pharmacodynamic properties

Pharmacotherapeutic group: Plasma substitutes and plasma protein fractions, ATC code: B05AA07.

Volulyte is an artificial colloid for volume replacement whose effect on intravascular volume expansion and haemodilution depends on the molar substitution by hydroxyethyl groups (0.4), the mean molecular weight (130,000 Da), the concentration (6%) as well as the dosages and infusion rate. Hydroxyethyl starch (130/0.4) contained in Volulyte is derived from waxy maize starch and has a substitution pattern (C_2/C_6 ratio) of approximately 9:1.

Infusion of 500 ml of a similar product containing HES 130/0.4 (6 %) in 0.9 % sodium chloride solution in 30 minutes in volunteers results in a plateau-like non-expansive volume increase of approximately 100% of the infused volume which lasts for approximately 4 to 6 hours.

Isovolaemic exchange of blood with HES 130/0.4 in 0.9% sodium chloride solution maintains blood volume for at least 6 hours.

Volulyte contains the electrolytes sodium (Na^+), potassium (K^+), Magnesium (Mg^{++}), chloride (Cl^-) and acetate (CH_3COO^-) in an isotonic composition. Acetate is a metabolisable anion which is oxidized in different organs and has an alkalising effect.

Volulyte contains a reduced amount of chloride and therefore counteracts the development of hyperchloremic metabolic acidosis, especially when large dose infusions are required or in patients at risk for the development of metabolic acidosis.

In cardiac surgery, chloride levels were significantly lower and base excess levels were seen to be less negative for Volulyte in comparison to HES 130/0.4 (6%) in sodium chloride solution.

Paediatric population:
Data are limited in children, therefore it is recommended not to use HES products in this population.

Treatment of pregnant women undergoing caesarean section.
There are limited study data available from the use of a single dose of HES 130/0.4 (6%) in 0.9% sodium chloride in pregnant women undergoing caesarean section with spinal anesthesia. The occurence of hypotension was significantly lower for HES 130/0.4 (6%) compared to crystalloid control (36.6% vs 55.3%). Overall efficacy evaluation showed significant benefits for HES 130/0.4 (6%) in the prevention of hypotension and in the occurence of severe hypotension compared to crytalloid control.

Pharmacokinetic properties

The pharmacokinetics of hydroxyethyl starch is complex and depends on the molecular weight and mainly on the molar substitution degree and the substitution pattern (C_2/C_6 ratio). When applied intravenously, molecules smaller than the renal threshold (60,000 – 70,000 Da) are readily excreted in the urine while larger ones are metabolised by plasma -amylase before the degradation products are renally excreted.

The mean *in vivo* molecular weight of HES 130/0.4 in the plasma is 70,000 – 80,000 Da immediately after infusion and remains above the renal threshold throughout the therapeutic period.

The volume of distribution is about 5.9 litres. Within 30 minutes of infusion the plasma level of HES 130/0.4 (6%) is still 75% of the maximum concentration. After 6 hours the plasma level has decreased to 14%. Following a single dose of 500 ml hydroxyethyl starch plasma levels almost return to baseline after 24 hours.

Plasma clearance was 31.4 ml/min when 500 ml of HES 130/0.4 (6%) was administered, with an AUC of 14.3 mg/ml x h, which shows a non-linear pharmacokinetic. Plasma half-lives were $t_{1/2\alpha}$ = 1.4 h and $t_{1/2\beta}$ = 12.1 h when 500 ml were administered on a single occasion.

Using the same dose (500 ml) in subjects with stable mild to severe renal impairment, the AUC moderately increased by a factor of 1.7 (95% confidence limits 1.44 and 2.07) in subjects with Cl_{Cr} < 50 ml/min compared to > 50 ml/min. Terminal half life and peak HES concentration were not affected by renal impairment. At $Cl_{Cr} \geq 30$ ml/min, 59% of the drug could be retrieved in the urine, vs. 51 % at Cl_{Cr} 15 to 30 ml/min. Plasma levels of HES 130/0.4 returned to baseline levels 24 hours following infusion.

No significant plasma accumulation occurred even after a daily administration of 500 ml of a 10% solution to volunteers containing HES 130/0.4 over a period of 10 days. In an experimental model in rats using repetitive doses of 0.7 g/kg BW per day of HES 130/0.4 over 18 days, 52 days after the last administration tissue storage was 0.6% of the total administered dose.

In a further pharmacokinetic study, patients with end stage renal disease (ESRD) and a creatinine clearance <10 ml/min requiring haemodialysis since at least three months received a single dose of 250 ml of HES 130/0.4 (6%), which equals a total amount of 15 g HES. After infusion of 250 ml HES 130/0.4 in patient with ESRD the mean concentration of HES in plasma (pre dialysis device) was 2.8 mg/ml at the end of infusion (=0.5 hours after starts of infusion) and decreased over time. After 24 hours mean HES concentration was 0.7 mg/ml. At the last sampling at 96 hours (N=7) the mean value was 0.25 mg/ml. HES 130/0.4 (6%) is contraindicated in patients receiving dialysis treatment (see section **Contraindications**).

Preclinical safety data

All non-clinical safety studies have been performed with a similar product containing HES 130/0.4 (10%) in 0.9% sodium chloride solution.

Carcinogenesis, Mutagenesis, Impairment of Fertility:
Long-term studies in animals to evaluate the carcinogenic potential of HES 130/0.4 (10%) in 0.9% sodium chloride solution have not been performed. No mutagenic effects were observed with HES 130/0.4 (10%) solution in the following tests on mutagenic activity: *Salmonella typhimurium* reverse mutation assay (*in vitro*), mammalian cells in the in vitro gene mutation assay, assessment of the clastogenic activity in cultured human peripheral lymphocytes (*in vitro)*, bone marrow cytogenetic test in Sprague-Dawley rats.

HES 130/0.4 (10%) solution in 0.9% sodium chloride did not impair fertility in male rats at IV doses up to 5 g/kg/day. In female rats, no adverse effects on fertility were observed at doses up to 2.5 g/kg/day. Slight inhibition of ovulation, evident as a decrease in corpora lutea and resulting in a reduced number of fetuses, was observed at a maternotoxic dose of 5 g/kg/day IV.

Subchronic toxicity:
The intravenous infusion of 9 g of the hydroxyethyl starch contained in Volulyte /kg b.w./day in rats and dogs for 3 months resulted in no sign of toxicity, except for a toxicity from the increased workload on the kidney and the liver uptake and metabolism of hydroxyethyl starch in the reticulo-endothelial system, hepatic parenchyma, and other tissues associated with the animals" unphysiological state during the test period.

The lowest toxic dose is above 9 g/kg/ b.w./ day of the hydroxyethyl starch contained in Volulyte, which is at least 3 times greater than maximum human therapeutic dose level.

In reproduction studies in rats and rabbits, HES 130/0.4 (10% solution) had no teratogenic properties. Embryo-foetotoxicity in rats and rabbits was only observed at maternal-toxic dose levels. Embryolethal effects were observed in rabbits at 5 g/kg body weight/day. In rats, bolus injection of this dose during pregnancy and lactation reduced body weight of offspring and induced developmental delays. Signs of fluid overload were seen in the dams. HES 130/0.4 (10% solution) had no effect in studies assessing skin sensitization, antigenicity, and blood compatibility.

PHARMACEUTICAL PARTICULARS

Incompatibilities

In the absence of compatibility studies, this medicinal product must not be mixed with other medicinal products.

Shelf life

a) Shelf life of the product as packaged for sale:
Plastic bottle (Kabipac) : 4 years
b) Shelf life after first opening of the container:
The product should be used immediately after opening.

Special precautions for storage

This medicinal product does not require any special storage conditions. Do not freeze. Do not store above 30°C.

Special precautions for disposal and other handling

For single use only

To be used immediately after the bottle or bag is opened.
Any unused solution should be discarded.
Use only clear, particle-free solutions and undamaged containers.
Any unused product or waste material should be disposed of in accordance with local requirements.

Keep this medicine out of the sight and reach of children.

ON MEDICAL PRESCRIPTION ONLY

PRESENTATION

Plastic bottle (Kabipac) @ 500 ml REG. No. :DKI1781203649A1

Manufactured by:

Fresenius Kabi Deutschland GmbH
Freseniusstraße 1
61169 Friedberg
Germany

Imported by:

PT. Fresenius Kabi Combiphar
Bandung – Indonesia

FRESENIUS KABI

INFORMASI PRODUK UNTUK PASIEN

Volulyte 6%

Larutan Infus

Larutan Isotonik *Hydroxyethyl Starch* (HES 130/0.4)

Baca keseluruhan isi leaflet dengan hati-hati sebelum Anda menggunakan obat ini.

- Simpan leaflet ini. Anda mungkin perlu untuk membacanya lagi.
- Jika anda memiliki pertanyaan lebih lanjut, silahkan bertanya kepada dokter atau apoteker anda.
- Jika ada efek samping yang serius, atau jika anda merasakan adanya efek samping yang tidak tercantum dalam leaflet ini. Lihatlah bagian 4.

Dalam leaflet ini tercantum:

1. APA VOLULYTE DAN APA KEGUNAANNYA

Volulyte adalah larutan infus intravena. Volulyte termasuk dalam kelompok obat yang dikenal sebagai pengganti volume plasma. Volulyte bekerja dengan meningkatkan dan mempertahankan sirkulasi volume darah untuk beberapa jam. Dalam kasus hipovolemia, yang pertama kali harus diberikan adalah cairan kristaloid. Volulyte digunakan untuk pengobatan hipovolemia jika pasien tidak memberikan respon terhadap pemberian cairan kristaloid tersebut.

2. SEBELUM ANDA MENGGUNAKAN VOLULYTE

Jangan menggunakan Volulyte jika anda:

- Menderita sakit kritis [misalnya anda harus tinggal di ICU]
- Menderita infeksi umum yang serius (Sepsis)
- Memiliki penyakit hati yang berat
- Memiliki alergi (hipersensitif) terhadap *hydroxyethyl starch*
- Telah diberitahu bahwa anda memiliki kondisi klinis dimana tubuh anda memiliki cairan berlebih yang berpotensi menimbulkan masalah, terutama jika anda memiliki cairan berlebih dalam paru-paru (*pulmonary oedema*) atau dalam kondisi jantung tidak mampu memompa cukup darah ke organ lain dalam tubuh (*congestive heart failure*).
- Memiliki kelainan koagulasi atau pendarahan.
- Memiliki riwayat gagal ginjal, dan anda tidak/sedikit menghasilkan urin yang bukan disebabkan oleh penurunan volume darah rendah (hipovolemia)
- Menjalani terapi dialisis (ginjal buatan)
- Menderita peningkatan kalium, natrium atau klorida yang tinggi di dalam darah (hiperkalemia, hipernatremia dan hiperkloremia yang parah)
- Memiliki riwayat pendarahan di otak (perdarahan intrakranial).

Peringatan dan Perhatian

Penting untuk memberitahu dokter anda jika anda memiliki:
- Gangguan fungsi pada hati Anda.
- Masalah dengan jantung atau sirkulasi darah.
- Gangguan pembekuan darah (koagulasi) gangguan.
- Masalah dengan ginjal anda.

Peningkatan kalium, natrium, magnesium, klorida, atau alkali di dalam darah (Hiperkalemia, hipernatremia, hipermagnesemia, hiperkloremia. Dalam kasus penyakit serius tertentu, dokter akan mempertimbangkan untuk menggunakan larutan garam bukan Volulyte.
Penggunaan Volulyte harus dihindari jika anda memiliki penyakit ginjal dan tidak harus digunakan jika anda menjalani terapi dialisis.

Peringatan dan perhatian lainnya :
- Dokter anda harus berhati-hati dalam menentukan dosis Volulyte, terutama jika anda memiliki gangguan jantung atau disfungsi ginjal parah, tidak boleh melebihi dosis yang direkomendasikan karena dapat menyebabkan kelebihan cairan yang dapat mempengaruhi kemampuan pembekuan darah (koagulasi) atau mengubah faktor darah (hematokrit, protein darah).

- Dokter anda harus secara teratur melakukan pengawasan terhadap fungsi ginjal, kadar elektrolit dalam darah, dan keseimbangan cairan untuk menjaga pemenuhan cairan yang cukup untuk anda. Dokter anda harus sangat berhati-hati apabila anda mengalami kenaikan kadar kalium, natrium, magnesium, atau klorida di dalam darah. Dokter anda juga harus secara teratur melakukan pengawasan terhadap fungsi hati.
- Jika fungsi ginjal anda menunjukkan tanda-tanda terjadinya masalah saat pengobatan, dokter anda akan menghentikan pemberian obat ini. Jika ada alasan lain yang mengharuskan anda untuk berada di rumah sakit dalam jangka panjang, dokter anda perlu memonitor fungsi ginjal anda hingga 90 hari.
- Jika anda diberikan Volulyte berulang kali atau diberikan dalam operasi jantung terbuka, dokter anda akan memantau kemampuan pembekuan darah anda. Jika menunjukkan adanya gangguan pembekuan darah, dokter anda akan menghentikan pemberian obat ini.
- Obat ini secara sementara dapat menyebabkan peningkatan kadar enzim serum amilase dan dapat mengganggu hasil pemeriksaan inflamasi pankreas (pankreatitis).

Selama pengobatan oleh dokter anda:

Selama pengobatan dengan Volulyte adalah penting bahwa:

- Pemenuhan cairan yang cukup untuk anda
- Dokter anda secara teratur melakukan pengawasan terhadap fungsi ginjal, keseimbangan cairan, dan kadar elektrolit dalam darah (garam-garaman terlarut dalam darah)

Volulyte dapat menyebabkan timbulnya reaksi gatal atau alergi. Karena adanya risiko reaksi alergi (anafilaktik / anafilaktoid), ketika anda menerima obat ini Anda akan diawasi secara ketat untuk mendeteksi tanda-tanda awal dari reaksi alergi.

Dokter anda akan menyesuaikan dosis Volulyte dengan hati-hati untuk mencegah kelebihan cairan. Hal ini akan dilakukan terutama jika anda memiliki masalah dengan paru-paru anda atau dengan hati atau sirkulasi. Jika perlu anda dapat menerima tambahan garam. Jika terjadi kekurangan cairan yang parah (dehidrasi), dokter anda pertama-tama harus memberikan larutan garam.

Jika secara klinis terjadi gangguan fungsi ginjal yang relevan selama terapi, dokter akan berhenti memberikan anda obat ini. Jika, untuk alasan lain anda berada di rumah sakit untuk jangka panjang, dokter mungkin perlu untuk memantau fungsi ginjal Anda sampai 90 hari.

Jika anda diberi Volulyte berulang kali atau dalam operasi jantung terbuka, dokter Anda akan memantau pembekuan darah anda. Dalam kasus gangguan pembekuan darah, dokter akan berhenti memberi anda obat ini.

Anak-anak:
Belum ada uji klinis terkait produk ini yang telah dilakukan pada anak-anak. Data penggunaan HES pada anak-anak terbatas, sehingga penggunaan HES tidak direkomendasikan untuk populasi anak-anak.

Penggunaan dengan obat lain:

Sampaikan kepada dokter atau apoteker anda jika anda sedang mengkonsumsi atau baru selesai mengkonsumsi obat-obatan lain, termasuk obat-obatan yang diperoleh tanpa resep. Sampai saat ini, Volulyte tidak diketahui memiliki interaksi dengan obat lain.

Penggunaan Volulyte dengan makanan dan minuman:

Tidak diketahui adanya efek negatif interaksi penggunaan bersamaan Volulyte dengan makanan dan minuman.

Kehamilan dan Menyusui:

Belum tersedia data uji klinis Volulyte terkait penggunaan pada kehamilan. Pemberian Volulyte pada ibu hamil hanya dilakukan setelah dipertimbangkan manfaatnya lebih besar dibandingkan dengan potensi risiko terhadap bayi. Tidak diketahui apakah obat ini disekresikan ke dalam air susu ibu. Mengingat banyak obat yang dieksresikan pada ibu menyusui, diperlukan kehati-hatian apabila Volulyte akan diberikan pada ibu menyusui. Anda dan dokter anda harus menentukan apakah akan melanjutkan/menghentikan pemberian air susu ibu atau akan menghentikan/melanjutkan terapi dengan Volulyte, dengan mempertimbangkan manfaat pemberian air susu ibu kepada anak dan manfaat terapi Volulyte pada ibu menyusui.

Mengemudi dan mengoperasikan mesin:

Setelah menggunakan Volulyte, kemampuan Anda mengemudi kendaraan atau mengoperasikan mesin tidak akan terpengaruh.

3. BAGAIMANA MENGGUNAKAN VOLULYTE

Volulyte diberikan dengan atau di bawah pengawasan dokter anda yang dengan seksama akan mengontrol banyaknya Volulyte yang diberikan pada anda.

Cara Pemberian
Anda akan mendapatkan obat ini melalui infus ke pembuluh darah vena (drip intravena). Kecepatan dan volume infus akan tergantung dengan kebutuhan anda, penyakit terkait penggunaan produk ini, dan referensi dosis maksimum perhari.

Dosis
Dokter anda akan menentukan dosis yang tepat untuk anda. Dokter akan memberikan dosis efektif terendah yang dapat diberikan dan tidak akan memberikan infus Volulyte lebih dari 24 Jam. Anda akan diawasi secara ketat oleh dokter pada awal pemberian infus Volulyte untuk memastikan bahwa anda tidak mengalami reaksi alergi mengingat seluruh substitusi plasma memiliki resiko timbulnya reaksi alergi yang bersifat ringan atau berat.

Dosis maksimum harian yang dianjurkan sampai 50 ml Volulyte/kg berat badan.

Penggunaan pada anak-anak:
Data penggunaan HES pada anak-anak terbatas, sehingga penggunaan HES tidak direkomendasikan untuk populasi anak-anak.

Jika anda mendapatkan Volulyte melebihi yang seharusnya anda terima

Dokter anda akan memastikan bahwa anda menerima Volulyte dalam jumlah yang tepat. Bagaimanapun, individu yang berbeda memerlukan dosis yang berbeda, dan jika terbukti dosis yang diberikan terlalu banyak, dokter anda akan segera menghentikan penggunaan Volulyte, dan jika dibutuhkan, akan diberikan obat yang dapat mengeluarkan cairan dari dalam tubuh (diuretik).
Jika ada pertanyaan lebih lanjut tentang penggunaan obat ini, silahkan bertanya pada dokter atau apoteker anda.

4. EFEK SAMPING YANG MUNGKIN TERJADI

Seperti obat-obatan lainnya, Volulyte dapat menyebabkan efek samping, meskipun tidak semua orang mengalaminya. Jika salah satu efek samping menjadi serius, atau jika anda mengalami efek samping yang tidak tercantum dalam leaflet ini, segera sampaikan kepada dokter atau staf perawat Anda.

Efek Samping yang umum (Terjadi pada hingga 1 dari 10 pasien)

- Gatal-gatal diketahui sebagai efek samping penggunaan pati hidroxyethil saat digunakan dalam jangka waktu yang lama dan pada dosis tinggi.
- Efek lain yang berhubungan dengan pengenceran darah yang terjadi pada dosis tinggi seperti perpanjangan waktu pembekuan darah.
- Kadar enzim amylase dalam darah dapat meningkat selama pemberian *hydroxyethyl starch* dan dapat mengganggu diagnosa peradangan pada pankreas (pankreatitis). Namun demikian, Volulyte tidak menyebabkan pankreatitis.

Efek Samping yang jarang (Dapat terjadi pada hingga dari 1 dari 1000 pasien)

Produk obat yang mengandung *hydroxyethyl starch* kemungkinan dapat menimbulkan reaksi alergi berat (kemerahan pada kulit, pembengkakan tenggorokan, kesulitan bernafas, gejala influenza ringan, kecepatan denyut jantung yang meningkat atau melemah, dan cairan di paru yang tidak disebabkan oleh gangguan jantung).

- Gangguan pembekuan darah, yang terjadi setelah pemberian *hydroxyethyl starch* tergantung pada dosis yang diberikan.
- Frekuensi yang tidak diketahui (tidak dapat diperkirakan berdasarkan data yang tersedia):
  - Cedera hati Cedera Ginjal

5. BAGAIMANA MENYIMPAN VOLULYTE

- Jauhkan dari jangkauan dan penglihatan Anak.
- Jangan disimpan diatas suhu 30 °C.
- Jangan dibekukan.

Volulyte tidak boleh digunakan setelah tanggal kadaluarsa yang tercantum pada label. Waktu kadaluarsa mengacu pada hari terakhir dari bulan tersebut.

Dokter Anda atau perawat akan memastikan bahwa larutan obat jernih, bebas partikel, dalam wadah yang tidak rusak sebelum digunakan.

Larutan Volulyte sebaiknya digunakan segera setelah dibuka, dan larutan sisa penggunaan Volulyte harus dibuang. Volulyte hanya digunakan untuk penggunaan sekali pakai.

Larutan obat tidak boleh dibuang melalui limbah air atau limbah rumah tangga. Tanyakan pada Apoteker cara untuk membuang larutan obat yang tidak diperlukan lagi. Langkah ini dapat membantu untuk melindungi lingkungan.

6. INFORMASI LEBIH LANJUT

Apa kandungan Volulyte

1000 ml larutan infus Volulyte mengandung :

Poli (O-2-hydroxyethyl) starch	60 g
• Molar substitusi	0,38-0,45
• Rata-rata berat molekul (Mr) = 130.000 Da (Terbuat dari *waxy maize starch*)	
Natrium asetat trihidrat	4,63 g
Natrium klorida	6,02 g
Kalium klorida	0,30 g
Magnesium klorida heksahidrat	0,30 g
Elektrolit :	
Na^+	137,0 mmol / l
K^+	4,0 mmol / l
Mg^{2+}	1,5 mmol / l
Cl^-	110,0 mmol / l
$CH3COO^-$	34,0 mmol / l
Osmolaritas teoritis:	286,5 mOsm / l
Keasaman :	<2,5 mmol NaOH / l
pH :	5,7-6,5

Komponen lain : Natrium hidroksida, asam klorida, aqua pro injeksi.

Pemerian Volulyte dan isi kemasan

Volulyte adalah larutan steril, jernih hingga sedikit opal (abu/putih susu), tidak berwarna hingga sedikit kuning.

Volulyte disimpan dalam:
- Botol plastik 500 ml

Bagaimana penyimpanan Volulyte

Hanya untuk penggunaan sekali pakai

Larutan Volulyte dianjurkan untuk segera digunakan setelah dibuka.

Larutan Volulyte yang tidak terpakai atau limbah bahan harus dibuang sesuai dengan persyaratan setempat.

Volulyte hanya digunakan jika larutan jernih, bebas partikel, dan dalam wadah yang tidak rusak.

Jangan dibekukan.

Jangan disimpan di atas 30°C.

Harus dengan resep dokter.

Diimpor oleh:

Fresenius Kabi Combiphar
Bandung - Indonesia

Dibuat oleh:

Fresenius Kabi Deutschland GmbH
Freseniusstraße 1
61169 Friedberg
Germany

Botol Plastik (Kabipac) @ 500 ml, No Reg : DKI1781203649A1

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