PACKAGE INSERT

1. NAME OF THE MEDICINAL PRODUCT
I.V.-Globulin SN-JAKEL 50mg/ml Solution for Injection

2. QUANTITATIVE COMPOSITION
1 mL contains:

Human Immunoglobulin-G (Active ingredient) ---------- 50mg
(Human Normal Immunoglobulin for Intravenous Administration, 5%)

Maltose (Stabilizer) ----------100mg
Water for injection (Solvent) ----------q.s.

Each vial of 50 mL contains: 2,500 mg of human normal immunoglobulin G

This product 'I.V.-Globulin SN-JAKEL 50mg/ml Solution for Injection (Human Normal Immunoglobulin in maltose, pH 4.25)', as a biological product is manufactured with plasma which was collected for the purpose of manufacture of plasma derivatives from individual donors. All plasma processes thawing, cold ethanol fractionation and virus inactivation processes such as S/D treatment and nano-filtration. Fraction II which comes from plasma fractionation is purified with chromatography, and takes S/D treatment for virus inactivation. Another purification process with chromatography is taken and dia-filtration is conducted. Nano-filtration process follows in order to remove viruses and bulk product is produced. Final bulk is manufactured by adding maltose (as stabilizer) to bulk product and passing through sterile filter, after this final bulk is filled into vials.

3. PHARMACEUTICAL FORM
Solution for injection.
Colorless or pale yellow, clear or slightly turbid liquid.

4. CLINICAL PARTICULARS
4.1 Therapeutic indications
1) A-/Hypogammaglobulinemia
2) Combined therapy with antibiotics in severe bacterial or viral infections.
3) Idiopathic Thrombocytopenic Purpura (In the case where other medicinal products are not effective or patients show apparent hemorrhage or patients need temporary control of hemostasis such as surgeon treatments or childbirth etc.)
4) Guillain-Barre Syndrome (Subacute febrile polyneuritis)
5) Kawasaki Syndrome (To prevent the disease of coronary artery complication)

4.2 Posology and method of administration
1) For Combined therapy with antibiotics in severe bacterial or viral infections and A-/Hypogammaglobulinemia. The usual dosage for adults and children is 2,500-5,000 mg and 50-150 mg/kg respectively (as a single dose) by intravenous drip infusion or direct intravenous infusion. In case of intravenous injection, it should be injected very slowly.
2) Idiopathic Thrombocytopenic Purpura
The usual dosage for the treatment of acute or chronic ITP is 200-400 mg/kg daily given for 5 consecutive days. The additional doses are discontinued if an adequate response does not occur.
3) Guillain-Barre Syndrome
The usual dosage is 400 mg/kg daily given for 5 consecutive days.

4) Kawasaki Syndrome
The usual dosage is 400 mg/kg daily given for 5 consecutive days(approximately), or 2,000 mg daily by intravenous drip infusion. It is recommended that the administration of I.V.-Globulin SN-JAKEL 50mg/ml Solution for Injection start within 7 days from the onset of Kawasaki Syndrome.

4.3 Contraindications
1) Patients with history of hypersensitivity to ingredients of this product.
2) Patients with history of shock to ingredients of this product

4.4 Special warnings and precautions for use
4.4.1 Special warnings
1) I.V.-Globulin SN-JAKEL 50mg/ml Solution for Injection manufactured from human plasma, has the potential to transmit hepatitis viruses or other viruses which can cause infection. The risk of virus infection cannot be entirely eliminated. Accordingly, patients with hemophilia or immunodeficiency are recommended to be appropriately vaccinated (Hepatitis A vaccine, etc.), and the attending physician should monitor patients regularly to check any sign of virus infection. Since I.V.-Globulin SN-JAKEL 50mg/ml Solution for Injection has potential risks as described above, the product must be carefully used. If the product is prescribed, only the necessary amount should be administered.
2) The risk of thrombosis by administration of this product cannot be entirely eliminated. Thrombosis may occur regardless of the route of administration and in the absence of known risk factors (advanced age, prolonged immobilization, hypercoagulable conditions, history of venous or arterial thrombosis, use of estrogens, indwelling central vascular catheters, hyperviscosity and cardiovascular risk factors). For patients at risk of thrombosis, administer at the minimum concentration possible and at the minimum rate of infusion practicable. Also ensure adequate hydration in patients before administration. Monitor for signs and symptoms of thrombosis and assess blood viscosity in patients at risk for hyperviscosity.

4.4.2 Special precautions
1) Patients with IgA deficiency (I.V.-Globulin SN-JAKEL 50mg/ml Solution for Injection may cause anaphylaxis to patients who have anti-IgA)
2) Patients with renal disorder (Renal function may deteriorate.)
3) Patients with hemolytic anemia or anemia from blood loss (Human parvovirus B19 infection may occur. In case of B19 infection, acute systemic symptoms with fever and severe anemia may occur.)
4) Patients with immunological incompetence or immunodeficiency (Human parvovirus B19 infection may occur. In case of infection, continuous anemia may occur.)
5) Patients with cerebrovascular and cardiovascular disorders or case history thereof for example, (Elderly patients with ischemic disease, cardiovascular disorder, cerebrovascular disorder; or patients with cerebrovascular and cardiovascular disorders or case history thereof: a large bolus administration can cause thrombus or embolism such as cerebral infarction, a myocardial infarction, etc., due to blood viscosity increase.)
6) Patients with high risk of thrombus or embolism (Thrombus or embolism may occur due to an increase of blood viscosity due to large bolus administration)
7) Patients with low heart function (A large bolus administration may cause heart failure or deterioration of heart condition)

4.4.3 General cautions
1) In case of successive or interval administration, shock or severe abnormal reactions may occur. Accordingly, administration should be done with caution, and catamnesis also should be carefully observed. Especially for children, special caution should be taken for the rate of

administration and catamnesis.
2) Administration of I.V.-Globulin SN-JAKEL 50mg/ml Solution for Injection for the treatment of Idiopathic Thrombocytopenic Purpura is for symptomatic therapy, not causal treatment.
3) In case of Acute Idiopathic Thrombocytopenic Purpura for children, spontaneous remission should be considered.
4) In present plasma fractionation process, it is difficult to inactivate or remove human parvovirus B19 and etc. completely. Accordingly, possibilities of infection cannot be disregarded, and special caution should be taken for catamnesis.
5) Even though a safety plan for the prevention of the spread of infection is prepared, the risk of infection cannot be entirely disregarded since I.V.-Globulin SN-JAKEL 50mg/ml Solution for Injection originates from human blood. This risk should be explained to patients.
6) Since I.V.-Globulin SN-JAKEL 50mg/ml Solution for Injection contains anti-A and anti-B, hemolytic anemia may occur when a large bolus is administered to patients with blood type A, B or AB.
7) Additional administration to patients with Kawasaki Disease should be conducted when additional administration is clearly necessary such as the effectiveness of I.V.-Globulin SN-JAKEL 50mg/ml Solution for Injection is insufficient for symptomatic remission (e.g. continuation of fever). (Safety and efficacy for additional administration has not been established)
8) In the case of combined therapy with antibiotics in severe infections, I.V.-Globulin SN-JAKEL 50mg/ml Solution for Injection should be used for patients who show insufficient response to proper antimicrobial chemotherapy.
9) There have been published reports that immunoglobulin intravenous injection is related to renal dysfunction, renal failure, osmotic nephrosis, death and etc.
10) Patients should be aware of the risk and discuss with their healthcare professionals and contact them if any signs or symptoms of thrombosis during or after receiving this product develop. Signs or symptoms of thrombosis may include pain and/or swelling of arms or legs with warmth over the affected area, discoloration of arms or legs, unexplained shortness of breath, chest pain or discomfort that worsens on deep breathing, unexplained rapid pulse, chest pain and numbness or weakness on one side of the body.
11) Healthcare professionals should be aware of the risk of thrombosis with human normal immunoglobulin products and discuss with their patients the risk of thrombosis associated with this product. Monitor patients carefully for signs and symptoms of thrombosis both at the time of infusion and after infusion and encourage patients to report any signs or symptoms.
12) This drug contains 10% maltose as an excipient and it may cause false positive reaction by showing high glucose level in blood during blood sugar test due to a reaction between maltose and GDH-PQQ (glucose dehydrogenase pyrroloquinoline quinone) or glucose-dye-oxidoreductase method. Also, the glucose level in urine can be increased temporarily as maltose is excreted as glucose. A case in which high glucose level is shown in urine after administration of the drug has been reported in Korea. Thus, when this drug is injected to patients with diabetes, medical staff should measure the exact glucose level of patients by utilizing glucose-specific method in order to avoid additional treatment causing hypoglycemia due to false positive reaction. Notify the risk factors and/or concerns to the patients sufficiently.

4.5 Interaction with other medicinal products and other forms of interaction
There is a possibility that live vaccines (measles, mumps, rubella and varicella vaccine etc.) do not work for the patients who are treated with I.V.-Globulin SN-JAKEL 50mg/ml Solution for Injection. Therefore, vaccination should be delayed for more than 3 months after administration.
If I.V.-Globulin SN-JAKEL 50mg/ml Solution for Injection is administered within 14 days after vaccination, re-vaccination should be taken after more than 3 months post I.V.-Globulin

SN-JAKEL 50mg/ml Solution for Injection administration. After a large bolus administration (more than 200 mg/kg) for the ITP and Kawasaki Syndrome use of live vaccines should be delayed by more than 6 months (In case of low risk of measles infection, measles vaccination should be delayed by more than 11 months).

4.6 Pregnancy and lactation
Safety for pregnant women has not been established. The possibility of parvovirus B-19 infection cannot be excluded from the administration of I.V.-Globulin SN-JAKEL 50mg/ml Solution for Injection. In case of parvovirus B-19 infection, fetal disturbances (abortion, hydrops fetalis, fetal death) may occur. I.V.-Globulin SN-JAKEL 50mg/ml Solution for Injection should be given to a pregnant woman only if the expected benefit justifies the possible risk.

4.7 Pediatric use
Safety for low birth weight infants and neonates has not been established.
Aseptic meningitis has been reported following large volume administration of immunoglobulin products for pediatric subject with Idiopathic Thrombocytopenic Purpura and etc.

4.8 Geriatric Use
1) Since elderly patients generally have low physiological function, I.V.-Globulin SN-JAKEL 50mg/ml Solution for Injection should be administered with special care.
2) Elderly patients with cerebrovascular and cardiovascular disorders or case history thereof: thromboembolism may occur I.V.-Globulin SN-JAKEL 50mg/ml Solution for Injection should be administered with special care.

4.9 Influences to clinical examination results
I.V.-Globulin SN-JAKEL 50mg/ml Solution for Injection contains pathogens or antibodies against the pathogens. Therefore, antibodies can be occasionally detected in blood after administration. Clinical diagnosis should be taken with special cautions and confirmed.

4.10 Effects on ability to drive and use machines
Some of the effects mentioned in the Undesirable effects may affect the ability to drive and use machines.

4.11 Undesirable effects
1) Shock
Symptoms of shock may occur occasionally. If dyspnea, wheeze, chest discomfort, drop in blood pressure or weak pulse is watched, administration should be discontinued, and 0.1 – 0.5 mL epinephrine (1:1,000) or the administration of cortisone should be considered.
2) Circulatory
Rapid infusion may result in a drop in blood pressure. (Caution should be taken on patients with A-/Hypo-gammaglobulinemia).
3) Liver
Jaundice or hepatic impairment with markedly elevated ALT/AST may occur. The patient should be carefully monitored. If there are abnormal findings, proper treatment should be taken.
4) Kidney
Acute renal failure has been reported with the use of immunoglobulin products. The patient should be sufficiently hydrated before dosing and should be thoroughly monitored for decreased urine output, increased creatinine, and increased BUN. If any of these occur, the therapy should be stopped and appropriate treatment should be provided. The administration

dosage and rate should be lowered (as low as possible) for patients at high risk for acute renal failure.
5) Central Nervous System
Aseptic meningitis (headache, nuchal rigidity, drowsiness, fever, photophobia, painful eye movements, nausea and vomiting) may occur due to a high dose administration, in which case, the therapy should be stopped and appropriate treatment should be taken.
6) Blood
Because a decrease in platelets may occur with the administration of I.V.-Globulin SN-JAKEL 50mg/ml Solution for Injection, patients should be monitored. If this symptom occurs, proper treatment should be taken.
7) Other possible undesirable effects
Drowsiness, chill, chest pain, back pain, gluteal pain and anxiety and etc.
8) Adverse events found in domestic Post Market Surveillance (PMS)
In accordance to the results of PMS conducted domestically for 4 years with 649 patients (A-/Hypogammaglobulinemia, Combined therapy with antibiotics in severe bacterial or viral infections, Idiopathic Thrombocytopenic Purpura, Guillain-Barre Syndrome, Kawasaki Syndrome), the incidence rate of adverse events were 9.09% (59/649 patients, 92 cases) and the incidence rate of tachycardia, an adverse reaction to which the pertinence to the use of drug could not be entirely eliminated, was reported to be 0.15% (1/649 patients, 1 case). Serious adverse events and adverse drug reactions were not reported. Incidence rate reported for unexpected adverse events was 8.94% (58/649 patients, 91cases), fever 1.69% (11/649 patients, 11 cases), vomiting 1.54% (10/649 patients, 10 cases), diarrhea 1.39% (9/649 patients, 9 cases), nose bleeding and headache were each 1.23% (8/649 patients, 8 cases), abdominal pain and cough were each 1.08% (7/649 patients, 7 cases), rash 0.46% (3/649 patients, 3 cases), pneumonia, itching, conjunctival infection, leg pain were each 0.31% (2/649 patients, 2 cases), abdominal distress, constipation, dyspepsia, blood in stool, nasal congestion, sore throat, pharynx disease, rhinitis, rhinorrhea, leg edema, convulsion, somnolence, skin fissure, hives, conjunctival haemorrhage, eye pain, neck stiffness, cervical lymphadenitis, tachycardia, pharyngitis were each 0.15% (1/649 patients, 1 case). From the above listed events, the tachycardia incident was an unexpected adverse reaction, which the pertinence to the use of drug could not be entirely eliminated, with an incidence rate of 0.15% (1/649 patients, 1 case). No unexpected severe adverse drug reactions were found.
9) The results of integrated assessments for this product and all the authorized pharmaceutical products through domestic PMS on adverse event (1989-2015.2) and spontaneous reporting on side-effects were assessed. From the statistically significant adverse events reported, the following adverse reaction has been identified to be new compared to adverse events reported from all other authorized pharmaceutical products:
- Abnormality of renal and urinary system: increase of glucose level in urine However, this assessment does not represent that the adverse reaction reported is drug-related.

4.12 Overdose
Overdose may lead to fluid overload and hyperviscosity, particularly in patients at risk, including elderly patients or patients with renal impairment.

5. PHARMACOLOGICAL PROPERTIES
5.1 Pharmacodynamic properties
Pharmacotherapeutic group: immune sera and immunoglobulins: immunoglobulins, normal human, for intravascular administration, ATC code: J06BA02
Human normal immunoglobulin contains mainly immunoglobulin G (IgG) with a broad spectrum of antibodies against infectious microorganisms.
Human normal immunoglobulin contains the IgG antibodies present in the normal population. It is usually prepared from pooled plasma from not fewer than 1000 donations. It has a

distribution of IgG subclasses closely proportional to that in native human plasma. Adequate doses of this medicinal product may restore abnormally low IgG levels to the normal range.
The mechanism of action in indications other than replacement therapy is not fully elucidated, but includes immunomodulatory effects

5.2 Pharmacokinetic properties
Human normal immunoglobulin is immediately and completely bioavailable in the recipient's circulation after intravenous administration. It is distributed relatively rapidly between plasma and extravascular fluid, after approximately 3-5 days equilibrium is reached between the intra- and extra-vascular compartments.
The half-life may vary from patient to patient, in particular, patients with primary immunodeficiency.
IgG and IgG-complexes are broken down in cells of the reticuloendothelial system.

6. PHARMACEUTICAL PARTICULARS
6.1 List of Excipients
Maltose
Water for injection

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

6.3 Shelf-life
30 months from the date of manufacture.

6.4 Special precautions for storage
Store at 2-8℃ in hermetic container.
Store in a dark place.

6.5 Nature and contents of container
50 mL of solution in a vial (Type II glass) with a rubber stopper (chlorobutyl rubber) and flip-off cap.

6.6 Precautions for administration
1) Do not mix and administrate with other medicinal products except for 5 % dextrose in water (D5W). (Do not mix with normal saline)
2) Rapid administration may cause hypotension. Intravenous drip infusion is recommendable. If direct intravenous administration is needed, it should be administered very slowly. (Caution should be taken with A-/Hypo-gammaglobulinemia patients.)
3) Do not use if the solution is turbid, or if it contains visible particulate matter.
4) I.V.-Globulin SN-JAKEL 50mg/ml Solution for Injection contains no preservatives. Each vial should be used within 1 hour and single use only due to microbial contamination. Do not reuse or save for future use.
(I.V.-Globulin SN-JAKEL 50mg/ml Solution for Injection is protein-containing solution which is susceptible to microbial contamination)
5) Do not use any solutions that have been frozen.
6) Visible particle may be generated when the solution collected with siliconized syringes. Inspect visually for particulate matter before use. Do not use if it contains visible particulate matter.

6.7 Precautions for handling
When a needle is inserted through the rubber stopper, the needle should be inserted vertically and slowly. If a needle is inserted in a tilted or twisted direction, rubber fragments may be mixed with medicinal product. Do not use if it contains any rubber fragments.

7. MANUFACTURER
GC Biopharma Corp.
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8. PRODUCT REGISTRATION HOLDER
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9. DATE OF REVISION OF THE TEXT
April 2025