PRODUCT MONOGRAPH

Trituration of
Mustargen®

mechlorethamine HCl for injection USP

Sterile vial for injection containing 10 mg mechlorethamine hydrochloride

Alkylating Agent

Lundbeck Inc.
Four Parkway North
Deerfield, IL 60015, U.S.A

Date of Preparation:
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Control # 132246

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Trituration of Pr Mustargen®

mechlorethamine HCl for injection USP

PART I: HEALTH PROFESSIONAL INFORMATION

SUMMARY PRODUCT INFORMATION

Route of Administration	Dosage Form / Strength	Clinically Relevant Nonmedicinal Ingredients
Intravenous	Sterile Injection / 10 mg mechlorethamine HCl	Sodium chloride

INDICATIONS AND CLINICAL USE

Before using MUSTARGEN (mechlorethamine HCl USP) see CONTRAINDICATIONS, WARNINGS, PRECAUTIONS, ADVERSE REACTIONS, and DOSAGE AND ADMINISTRATION.

MUSTARGEN, administered intravenously, is indicated for the palliative treatment of Hodgkin's disease (Stages III and IV) as part of the MOPP chemotherapy combination (mechlorethamine, vincristine, procarbazine, and prednisone).

CONTRAINDICATIONS

The use of MUSTARGEN is contraindicated in the presence of known infectious diseases and in patients who have had previous anaphylactic reactions or who are hypersensitive to this drug or to any ingredient in the formulation or component of the container.

WARNINGS AND PRECAUTIONS

Serious Warnings and Precautions

MUSTARGEN (mechlorethamine HCl) should be administered only under the supervision of a physician who is experienced in the use of cancer chemotherapeutic agents.

- Dose limiting toxicity is myelosuppression (see Systemic Toxicity, Hematologic);
- Hypersensitivity reactions, including anaphylaxis have occurred (see Systemic Toxicity, General);
- MUSTARGEN is a Carcinogen/Mutagen/Teratogen (see Carcinogenesis/Mutagenesis and Special Populations);
- MUSTARGEN is a powerful vesicant (see Adverse Reactions, Local Toxicity)

This drug is **HIGHLY TOXIC** and both powder and solution must be handled and administered with care (see Special Handling Instructions and Dosage and Administration). Avoid exposure during pregnancy.

General

The use of MUSTARGEN in patients with leucopenia, thrombocytopenia, and anemia, due to invasion of the bone marrow by tumor carries a greater risk. In such patients a good response to treatment with disappearance of the tumor from the bone marrow may be associated with improvement of bone marrow function. However, in the absence of a good response or in patients who have been previously treated with chemotherapeutic agents, hematopoiesis may be further compromised, and leucopenia, thrombocytopenia and anemia may become more severe and lead to the demise of the patient.

The hematologic status of the patient must first be determined. It is essential to understand the hazards and therapeutic effects to be expected. Careful clinical judgment must be exercised in selecting patients. If the indication for its use is not clear, the drug should not be used.

As nitrogen mustard therapy may contribute to extensive and rapid development of amyloidosis, it should be used only if foci of acute and chronic suppurative inflammation are absent.

Precautions must be observed with the use of MUSTARGEN and radiotherapy or other chemotherapy in alternating courses. Hematopoietic function is characteristically depressed by either form of therapy, and neither MUSTARGEN following radiotherapy nor radiotherapy subsequent to the drug should be given until bone marrow function has recovered. In particular, irradiation of such areas as

sternum, ribs, and vertebrae shortly after a course of nitrogen mustard may lead to hematologic complications.

MUSTARGEN has been reported to have immunosuppressive activity. Therefore, it should be borne in mind that use of the drug may predispose the patient to bacterial, viral or fungal infections. This is more likely to occur when concomitant steroid therapy is employed.

Hyperuricemia may develop during therapy with MUSTARGEN. The problem of urate precipitation should be anticipated, particularly in the treatment of the lymphomas, and adequate methods for control of hyperuricemia should be instituted and careful attention directed toward adequate fluid intake before treatment.

Many abnormalities of renal, hepatic, and bone marrow function have been reported in patients with neoplastic disease and who are receiving MUSTARGEN. It is advisable to check renal, hepatic, and bone marrow functions frequently.

Carcinogenesis and Mutagenesis

Therapy with alkylating agents such as MUSTARGEN may be associated with an increased incidence of a second malignant tumor, especially when such therapy is combined with other antineoplastic agents or radiation therapy. The International Agency for Research on Cancer has judged that mechlorethamine is a probable carcinogen in humans. This is supported by limited evidence of carcinogenicity in humans and sufficient evidence of carcinogenicity in animals.

Young-adult female RF mice were injected intravenously with four doses of 2.4 mcg/kg of mechlorethamine (0.1% solution) at 2-week intervals with observations for up to 2 years. An increased incidence of thymic lymphomas and pulmonary adenomas was observed. Painting mechlorethamine on the skin of mice for period up to 33 weeks resulted in squamous cell tumors in 9 of 33 mice.

Mechlorethamine induced mutations in the Ames test, in E. coli, and Neurospora crassa. Mechlorethamine caused chromosome aberrations in a variety of plant and mammalian cells. Dominant lethal mutations were produced in ICR/Ha Swiss mice.

Mechlorethamine impaired fertility in the rat at a daily dose of 500 mg/kg intravenously for two weeks.

Special Populations

Pregnant Women: There is evidence that the nitrogen mustards have induced fetal abnormalities particularly when used early in pregnancy. MUSTARGEN has been shown to produce fetal malformations in the rat and ferret when given as single

subcutaneous injections of 1 mg/kg (2-3 times the maximum recommended human dose). There are no adequate and well controlled studies in pregnant women.

The possible benefits of administration of MUSTARGEN in women of childbearing potential must be weighed against the considered risks; patients should be apprised of the risks involved. Women of childbearing potential should be advised to avoid becoming pregnant.

Nursing Mothers: It is not known whether this drug is excreted in human milk. Because many drugs are excreted in human milk and because of the potential for serious adverse reactions in nursing infants for MUSTARGEN, a decision should be made whether to discontinue nursing or to discontinue the drug, taking into account the importance of the drug to the mother.

Pediatric Use: Safety and effectiveness in pediatric patients have not been established by well-controlled studies. Use of MUSTARGEN in pediatric patients has been quite limited. MUSTARGEN has been used in Hodgkin's disease, stages III and IV, in combination with other oncolytic agents (MOPP schedule).

Geriatric Use: Clinical studies of MUSTARGEN did not include sufficient numbers of subjects aged 65 and over to determine whether they respond differently from younger subjects. In general, dose selection for an elderly patient should be cautious, usually starting at the low end of the dosing range, reflecting the greater frequency of decreased hepatic, renal or cardiac function, and of concomitant disease or other drug therapy.

ADVERSE REACTIONS

Clinical use of MUSTARGEN (mechlorethamine HCl USP) usually is accompanied by toxic manifestations.

Local Toxicity

MUSTARGEN (mechlorethamine HCl USP) is a powerful vesicant and is intended for intravenous use. Inhalation of dust or vapors and contact with skin or mucous membranes, especially that of the eyes, must be avoided. Should accidental eye contact occur, copious irrigation for at least 15 minutes with normal saline or a balanced salt ophthalmic irrigating solution should be instituted immediately, followed by prompt ophthalmologic consultation. Should accidental skin contact occur, the affected part must be irrigated immediately with copious amounts of water, for at least 15 minutes, followed by 2 percent sodium thiosulfate solution.

Thrombosis and thrombophlebitis may result from direct contact of the drug with the intima of the injected vein. Avoid high concentration and prolonged contact with the

drug, especially in cases of elevated pressure in the antebrachial vein (e.g., in mediastinal tumor compression from severe superior vena cava syndrome).

Systemic Toxicity

General

Hypersensitivity reactions, including anaphylaxis, have been reported. Nausea, vomiting and depression of formed elements in the circulating blood are dose-limiting side effects and usually occur with the use of full doses of MUSTARGEN. Jaundice, alopecia, vertigo, tinnitus and diminished hearing may occur infrequently. Renal damage manifested by oliguria and azotemia has been reported.

Rarely, hemolytic anemia associated with lymphomas may be precipitated by treatment with alkylating agents including MUSTARGEN. Also, various chromosomal abnormalities have been reported in association with nitrogen mustard therapy.

MUSTARGEN is given preferably at night in case sedation for side effects is required. Nausea and vomiting usually occur 1 to 3 hours after use of the drug. Emesis may disappear in the first 8 hours, but nausea may persist for 24 hours. Nausea and vomiting may be so severe as to precipitate vascular accidents in patients with a hemorrhagic tendency. Premedication with antiemetics, in addition to sedatives, may help control severe nausea and vomiting. Anorexia, weakness and diarrhea may also occur.

Hematologic

The usual course of MUSTARGEN (total dose of 0.4 mg/kg/d either given as a single intravenous dose or divided into two or four daily doses of 0.2 or 0.1 mg/kg respectively) generally produces a lymphocytopenia within 24 hours after the first injection; significant granulocytopenia occurs within 6 to 8 days and lasts for 10 days to 3 weeks. Agranulocytosis appears to be relatively infrequent and recovery from leukopenia in most cases is complete within two weeks of the maximum reduction. Thrombocytopenia is variable but the time course of the appearance and recovery from reduced platelet counts generally parallels the sequence of granulocyte levels. In some cases severe thrombocytopenia may lead to bleeding from the gums and gastrointestinal tract, petechiae, and small subcutaneous hemorrhages; these symptoms appear to be transient and in most cases disappear with return to a normal platelet count. However, a severe and even uncontrollable depression of the hematopoietic system occasionally may follow the usual dose of MUSTARGEN, particularly in patients with widespread disease and debility and in patients previously treated with other antineoplastic agents or x-ray. Persistent pancytopenia has been reported. Erythrocyte and hemoglobin levels may decline during the first 2 weeks after therapy. Depression of the hematopoietic system may be found up to 50 days or more after starting therapy.

Skin
Occasionally, a maculopapular skin eruption occurs, but this may be idiosyncratic and does not necessarily recur with subsequent courses of the drug. In one patient erythema multiforme has been observed. Herpes zoster, a common complicating infection in patients with lymphomas, may first appear after therapy is instituted and on occasion may be precipitated by treatment. Further treatment should be discontinued during the acute phase of this illness to avoid progression to generalized herpes zoster.

Reproductive
Since the gonads are susceptible to MUSTARGEN, treatment may be followed by delayed menses, oligomenorrhea, or amenorrhea, temporary or permanent. Impaired spermatogenesis, azoospermia, and total germinal aplasia have been reported in male patients treated with alkylating agents, especially in combination with other drugs. In some instances spermatogenesis may return in patients in remission, but this may occur only several years after intensive chemotherapy has been discontinued. Patients should be warned of the potential risk to their reproductive capacity.

DRUG INTERACTIONS

No formal drug interaction studies have been carried out.

DOSAGE AND ADMINISTRATION

Intravenous Administration

The dosage of MUSTARGEN (mechlorethamine HCl USP) varies with the clinical situation, the therapeutic response and the magnitude of hematologic depression. A total dose of 0.4 mg/kg/d of body weight for each course usually is given either as a single dose or in divided doses of 0.1 to 0.2 mg/kg. Dosage should be based on ideal dry body weight. The presence of edema or ascites must be considered so that dosage will be based on actual weight unaugmented by these conditions.

Extravasation of the drug into surrounding tissues results in a painful inflammation. The area usually becomes indurated and sloughing may occur. If leakage of drug is obvious, prompt infiltration of the area with sterile isotonic sodium thiosulfate (1/6 molar) and application of an ice compress for 6 to 12 hours may minimize the local reaction. For a 1/6 molar solution of sodium thiosulfate, use 4.14 g of sodium thiosulfate per 100 mL of Sterile Water for Injection or 2.64 g of anhydrous sodium thiosulfate per 100 mL, or dilute 4 mL of Sodium Thiosulfate Injection USP (10%) with 6 mL of Sterile Water for Injection USP.

Within a few minutes after intravenous injection, MUSTARGEN undergoes chemical transformation, combines with reactive compounds, and is no longer present in its active form in the blood stream.

Subsequent courses should not be given until the patient has recovered hematologically from the previous course; this is best determined by repeated studies of the peripheral blood elements awaiting their return to normal levels. It is often possible to give repeated courses of MUSTARGEN as early as three weeks after treatment.

Preparation of Solution and Intravenous Administration

Each vial of MUSTARGEN contains 10 mg of mechlorethamine hydrochloride triturated with sodium chloride q.s. 100 mg. In neutral or alkaline aqueous solution it undergoes rapid chemical transformation and is highly unstable. Although solutions prepared according to instructions are acidic and do not decompose as rapidly, they should be prepared immediately before each injection since they will decompose on standing. When reconstituted, MUSTARGEN is a clear colorless solution. Do not use if the solution is discolored or if droplets of water are visible within the vial prior to reconstitution.

Using a sterile 10 mL syringe, inject 10 mL of Sterile Water for Injection or 10 mL Sodium Chloride for Injection into a vial of MUSTARGEN. With the needle still in the rubber stopper, shake the vial several times to dissolve the drug completely. The resultant solution contains 1 mg of mechlorethamine hydrochloride per mL.

Technique for Intravenous Administration

Withdraw into the syringe the calculated volume of solution required for a single injection. **Dispose of any remaining solution after neutralization** (see below). Although the drug may be injected directly into any suitable vein, it is injected preferably into the rubber or plastic tubing of a flowing intravenous infusion set. This reduces the possibility of severe local reactions due to extravasation or high concentration of the drug. Injecting the drug into the tubing rather than adding it to the entire volume of the infusion fluid minimizes a chemical reaction between the drug and the solution. The rate of injection apparently is not critical provided it is completed within a few minutes.

Neutralization of Equipment and Unused Solution

To clean rubber gloves, tubing, glassware, etc., after giving MUSTARGEN, soak them in an aqueous solution containing equal volumes of sodium thiosulfate (5%) and sodium bicarbonate (5%) for 45 minutes. Excess reagents and reaction products are washed away easily with water. Any unused injection solution should be neutralized by mixing with an equal volume of sodium thiosulfate/sodium bicarbonate solution. Allow the mixture to stand for 45 minutes. Vials that have

contained MUSTARGEN should be treated in the same way with thiosulfate/bicarbonate solution before disposal.

OVERDOSAGE

The intravenous LD_{50} of MUSTARGEN is 2 mg/kg and 1.6 mg/kg in the mouse and rat, respectively. The oral LD_{50} for mechlorethamine hydrochloride is 20 mg/kg and 10 mg/kg in the mouse and rat, respectively.

The margin of safety in therapy with MUSTARGEN is narrow and considerable care must be exercised in the matter of dosage. Repeated examinations of blood are mandatory as a guide to subsequent therapy.

Manifestations

With total doses exceeding 0.4 mg/kg/d of body weight for a single course, severe leukopenia, anemia, thrombocytopenia and a hemorrhagic diathesis with subsequent delayed bleeding may develop. Death may follow.

Treatment of Overdosage

The only treatment in instances of excessive dosage appears to be repeated blood product transfusions, antibiotic treatment of complicating infections and general supportive measures.

PART II: SCIENTIFIC INFORMATION

ACTION AND CLINICAL PHARMACOLOGY

Mechlorethamine, a biologic alkylating agent, has a cytotoxic action which inhibits rapidly proliferating cells.

STORAGE AND STABILITY

Store at 15-30°C (59-86°F). Protect from light and humidity.

Solutions of mechlorethamine HCl decompose on standing; therefore, solutions of the drug should be prepared immediately before use.

SPECIAL HANDLING INSTRUCTIONS

Appropriate protective equipment should be worn when handling MUSTARGEN. Should accidental contact occur, contaminated clothing and shoes should be removed and destroyed immediately. Medical attention should be sought immediately.

Preparation of injectable antineoplastic drugs should be performed in a Class II laminar flow biological safety cabinet. Personnel preparing drugs of this class should wear chemical resistant, impervious gloves, safety goggles, other garments and shoe covers. Additional body garments should be used based upon the task being performed to avoid exposed skin surfaces and inhalation of vapors and dust. Appropriate techniques should be used to remove potentially contaminated clothing.

DOSAGE FORMS, COMPOSITION AND PACKAGING

Sterile, light yellow brown crystalline powder for injection by the intravenous routes after dissolution. Each vial of MUSTARGEN contains 10 mg of mechlorethamine hydrochloride triturated with sodium chloride q.s. 100 mg. When dissolved with 10 mL Sterile Water for Injection or 0.9% Sodium Chloride for Injection, the resulting solution has a pH of 3-5 at a concentration of 1 mg mechlorethamine HCl per mL.

PHARMACEUTICAL INFORMATION

Proper name: Mechlorethamine HCl USP

Chemical name: 2-chloro-N-(2-chloroethyl)-N-methy-lethanamine hydrochloride.

Molecular formula and molecular mass: The empirical formula is $C_5H_{11}Cl_2N$•HCl, and the structural formula is: $CH_3N(CH_2CH_2Cl)_2$•HCl. The molecular weight is 192.52 and the melting point is 109-110ºC.

Physicochemical properties: Hygroscopic powder that is very soluble in water and also soluble in alcohol.

CLINICAL TRIALS

The approved indication is supported by referenced literature.

REFERENCES

1. DeVita VT, Serpick AA, Carbon PP. Combination chemotherapy in the treatment of advanced Hodgkin's disease. Ann Intern Med 1970;73:881-95.

2. Recommendations for the Safe Handling of Parenteral Antineoplastic Drugs, Washington, DC: Division of Safety, National Institutes of Health, US Department of Health and Human Services, Public Health Service publication, NIH 83-2621; 1983.

3 International Agency for Research on Cancer (IARC) Monograph Vol 9 "Aziridines, *N*-, *S*- and *O*-Mustards and Selenium1975; 268 pages; ISBN 92 832 1209 6"

PART III: CONSUMER INFORMATION

Trituration of
Pr Mustargen®

mechlorethamine HCl for injection USP

This leaflet is part III of a three-part "Product Monograph" published in Canada and is designed specifically for Consumers. This leaflet is a summary and will not tell you everything about MUSTARGEN. Contact your doctor or pharmacist if you have any questions about the drug.

ABOUT THIS MEDICATION

What the medication is used for:
MUSTARGEN (mechlorethamine hydrochloride for injection) is used in the palliative treatment of Hodgkin's disease (a cancer of lymph tissue) in combination with other drugs (vincristine, procarbamine and prednisone).

What it does:
MUSTARGEN is a chemotherapy drug, often used in combination with other drugs to kill cancer cells. Most chemotherapy agents (including MUSTARGEN) work by killing rapidly dividing cells, such as cancer cells. This action can affect normal cells as well.

When it should not be used:
MUSTARGEN should not be used if you:

- have had a previous allergic reaction to mechlorethamine hydrochloride or any other ingredients in MUSTARGEN
- have an infection.

What the medicinal ingredient is:
Mechlorethamine hydrochloride is the active ingredient.

What the nonmedicinal ingredients are:

- Sodium chloride (90 mg)

What dosage forms it comes in:
Each vial of MUSTARGEN has 10 mg of mechlorethamine hydrochloride with 90 mg of sodium chloride that are ground together. The powder for injection is light yellow-brown in color.

WARNINGS AND PRECAUTIONS

SERIOUS WARNINGS AND PRECAUTIONS

MUSTARGEN is highly toxic and should not be handled by pregnant women. MUSTARGEN must be given by a doctor experienced in the used of anti-cancer drugs. Serious side effects with the use of MUSTARGEN include:

- decrease in the production of blood cells (myelosuppression)
- severe allergic reaction including anaphylaxis
- increased risk of having s second cancer
- severe blistering (MUSTARGEN is a powerful vesicant)

BEFORE you use MUSTARGEN, talk to your doctor if you:

- have any infections
- had radiation therapy to the chest area
- are taking steroid medications by mouth such as prednisone, dexamethasome or hydrocortisone
- are pregnant or plan to get pregnant. MUSTARGEN is harmful to an unborn child. While receiving treatment with MUSTARGEN, women must use effective birth control methods to avoid getting pregnant
- are breast feeding. Breast feeding should be stopped before treatment with MUSTARGEN

As MUSTARGEN may be harmful to an unborn child, women should be advised to avoid becoming pregnant. Effective birth control methods should be used. Tell your doctor right

away if you become pregnant during treatment. If you have been nursing, you should stop before starting treatment with MUSTARGEN. Ask your baby's doctor to recommend a formula that would be best for your baby.

As MUSTARGEN may damage the chromosomes found in sperm, men getting treated with MUSTARGEN should use effective birth control.

INTERACTIONS WITH THIS MEDICATION

MUSTARGEN has been reported to suppress your immune system. The use of this drug may make you more susceptible to bacterial, viral or fungal infections. If you use this drug in combination with steroid therapy such as prednisone, dexamethasone or hydrocortisone, it is more likely that you may get a bacterial, viral or fungal infection.

If radiation therapy is given before or after treatment with MUSTARGEN, there is a greater risk of a decrease in your blood count.

Tell your doctor or pharmacist about any medication that you are taking or plan to take including any medicine obtained without a prescription, vitamin or mineral supplement, and natural health products.

PROPER USE OF THIS MEDICATION

How is MUSTARGEN given?

MUSTARGEN is given through a vein in the arm (intravenously). MUSTARGEN may also be injected directly into the cavity around your lungs ("intrapleurally"), into the cavity in your abdomen ("intraperitoneally"), or into the cavity around your heart ("intrapericardially"). It is given in the hospital, outpatient department or clinic.

If you are getting many injections, for your convenience, your doctor may insert a catheter (thin tube) or port into a large vein in your body that is placed there as long as it is needed. Medicines get injected through the catheter or port rather than directly into a vein.

What is the dose of MUSTARGEN I will receive?

The dose of MUSTARGEN will be calculated based on how much you weigh and other factors your doctor will consider, such as your blood count. MUSTARGEN can either be given as a single dose or divided into two or four daily doses.

What happens if I receive too much MUSTARGEN?

If you are given too large a dose of MUSTARGEN, your white blood cell count, red blood cell count or platelet count could get dangerously low. This could lead to bleeding or even death.

Is treatment with MUSTARGEN painful?

MUSTARGEN is usually given through a vein. If the drug leaks into the area outside the vein, painful swelling will result. If this should happen, or if MUSTARGEN should leak out of the IV and contact your skin, tell your doctor or nurse right away.

Will I be able to work?

Some people work full time while others work part time or wait until their chemotherapy treatments are finished. It depends on the type of job you have and the side effects you experience.

What happens after treatment?

After you have completed all your chemotherapy treatments, your doctor will check you regularly.

SIDE EFFECTS AND WHAT TO DO ABOUT THEM

Why do side effects occur?

Most chemotherapy medicines work by killing the fastest growing cells in the body, which include cancer cells and some normal cells. Normal cells that grow very rapidly are in your bone marrow, lining of the mouth, stomach and hair follicles. These fast-growing cells can be affected by the chemotherapy medicines too, sometimes causing side effects such as low white blood cell count, low red blood cell count (anemia), nausea and vomiting, rash and hair loss. These side effects usually disappear after treatment ends. Before your next cycle of chemotherapy, your white blood cell count normally increases and new cells grow back. After your chemotherapy is completely finished, your hair will begin to grow back.

Side effects with MUSTARGEN include:

Nausea and vomiting

The amount of nausea and vomiting varies widely from person to person. Some have mild nausea and vomiting for a short time after treatment. Nausea and vomiting may start right after a chemotherapy treatment or several hours later. Your doctor can give you medicine to prevent nausea or reduce its severity. If you've been treated with a medicine for nausea, but still feel sick to your stomach or vomit, tell your doctor. There are other medicines your doctor can give you that may work better for you. You can also try drinking clear fluids (water, diluted soft drinks, apple juice, and broth) or sucking on popsicles and ice chips. Here are some tips that may help reduce nausea.

- Eat small meals or snacks throughout the day instead of 2 or 3 large meals.
- Eat foods that are cold or at room temperature.
- Cut out foods that are fried, spicy, fatty or sweet.
- Stay away from odors that may bother you such as cooking smells, cigarette smoke, car exhaust or perfume.
- Sit upright in a chair after eating – don't lie flat for at least 2 hours.
- Wear loose-fitting clothes, especially around the waist.
- Suck on ice, mints or sour candy (but avoid sour candy if you have mouth sores).
- Eat something light a few hours before your chemotherapy treatment.

Allergic reactions

Your doctor or nurse will monitor you for signs of allergic reaction during your treatment. These could include symptoms such as itchiness, rash, swelling or shortness of breath.

Fatigue

Feeling weak – or fatigued – is one of the most common side effects of chemotherapy. Many other factors such as stress, diet, sleeping patterns, and your age can also cause fatigue. For some, fatigue may start to improve 2 to 3 months after you complete your chemotherapy treatments. Here's how you can help reduce fatigue.

- Plan your activities. Allow rest between periods of activity.
- List all of the things you have to do, and number them in order of importance. Only do the things on your list that must get done. Leave the other tasks for another day.
- Ask family and friends to help you with driving, housework or other tasks. For example, ask your friend to pick up a few things for you the next time he/she goes to the supermarket.
- Eat a well-balanced diet.
- Do light exercise regularly.

Hair loss

Hair loss is common in chemotherapy with MUSTARGEN. However, the hair loss is temporary, and your hair usually starts to grow back within 2 or 3 months after you've finished your treatments.

Infection

From 24 hours to 3 weeks after a chemotherapy cycle, your white blood cell count may be low. This is the most dangerous time for getting an infection. White blood cells defend your body against infections. When there are very few white blood cells, there may not be enough to fight off an infection. It's important to know the signs of infection so that you can get treatment before the infection becomes serious. The signs of infection include:

- fever over 38° C (100° F),
- chills or sweating,
- sore throat or coughing,
- redness or swelling around a cut, wound or catheter site,
- a burning feeling when you urinate,
- unusual vaginal itching or discharge.

Your doctor may prescribe oral antibiotics to help prevent infection during chemotherapy. Your doctor may also give you medicine to help increase the number of your white blood cells. If there is evidence of an infection, your doctor may need to admit you to the hospital for a short period of time to receive intravenous antibiotics.

If you have signs of an infection, call your doctor right away. Waiting too long (even a few hours) can lead to serious illness

The following tips can help you prevent infections.

- Wash your hands often. Use lotion afterwards to prevent your skin from becoming dry and cracked.
- Bathe or shower every 1 to 2 days.
- Be careful not to cur yourself when you use a knife, scissors, razor or other sharp objects.
- Stay away from people who are sick.
- Have someone else clean cat litter boxes, bird cages or fish tanks.
- Eat well-balanced meals.

Infertility

MUSTARGEN may interfere with the ability of male or female patients to have children. It may cause a woman's menses to come less frequently or even to stop permanently. It may cause a reduced sperm count in men which may be permanent.

Injection site reactions

MUSTARGEN may cause reactions at the site where it was given including pain, swelling, blood clots and inflammation of the veins. Your doctor or nurse will attempt to reduce the risks of this side effect. If you start to have pain, redness, or swelling where the intravenous injection is given tell your doctor or nurse right away.

Anemia

Chemotherapy medicines affect the bone marrow, which is where red blood cells are formed. Red blood cells carry oxygen to the muscles and other tissues in your body. When there are too few red blood cells, your muscles, and other body tissues can't get enough oxygen to do their work, and you feel exhausted. If your red blood cell count drops very low, you may also feel weak or dizzy, or may have shortness of breath. These are all symptoms of anemia. If you have these symptoms, tell your doctor or nurse. Your doctor may give you medicine to treat anemia that is caused by chemotherapy. Do not start taking iron tables on your own – they may not work for anemia caused by chemotherapy medicines and can make your nausea worse.

Kidney or liver damage

Your doctor or nurse will do blood tests to check for problems with your kidneys or liver.

SERIOUS SIDE EFFECTS, HOW OFTEN THEY HAPPEN AND WHAT TO DO ABOUT THEM			
Symptom / effect	Talk with your doctor or pharmacist		Stop taking drug and call your doctor or pharmacist
	Only if severe	In all cases	
Very Common			
Nausea	√		
Vomiting	√		
Common			
Allergic reactions		√	
Fatigue	√		
Infection		√	
Infertility		√	
Injection site reaction		√	
Uncommon			
Anemia		√	
Rare			
Kidney damage			√
Liver damage			√

This is not a complete list of side effects. If you experience any unexpected side effects while taking MUSTARGEN, contact your doctor or pharmacist.

HOW TO STORE IT

MUSTARGEN (mechlorethamine HCl for injection) should be stored at 15-30°C (59-86°F) and protected from light and humidity.

Solutions of mechlorethamine HCl decompose on standing; therefore, solutions of the drug should be prepared immediately before use.

REPORTING SUSPECTED SIDE EFFECTS

To monitor drug safety, Health Canada collects information on serious and unexpected effects of drugs. If you suspect you have had a serious or unexpected reaction to this drug you may notify Health Canada by:

toll-free telephone: 866-234-2345
toll-free fax 866-678-6789
By email: cadrmp@hc-sc.gc.ca

By regular mail:
National AR Centre
Marketed Health Products Safety and Effectiveness
Information Division
Marketed Health Products Directorate
Tunney's Pasture, AL 0701C
Ottawa ON K1A 0K9

NOTE: Before contacting Health Canada, you should contact your physician or pharmacist.

MORE INFORMATION

This document plus the full Product Monograph, prepared for health professionals, may be obtained by contacting the sponsor, Lundbeck Inc., at: 1-877-211-3471.

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