

Mitoxantrone (Systemic)

DESCRIPTION

Mitoxantrone is a synthetic antineoplastic anthracenedione structurally similar to the anthracyclines doxorubicin and daunorubicin. Its exact mechanism of action is unknown but it is a DNA-reactive agent. Mitoxantrone intercalates into DNA through hydrogen bonding causing crosslinks and strand breaks. Additionally, it interferes with RNA and is a potent inhibitor of topoisomerase II, an essential enzyme active in virtually every cellular DNA process. Mitoxantrone shows a cytotoxic effect on both proliferating and non-proliferating cultured human cells suggesting that it lacks cell-cycle specificity.

An example of a preparation of mitoxantrone is Novantrone®.

REFER TO DECISION SUPPORT TREE

POLICY

- Mitoxantrone for the treatment of multiple sclerosis is considered **medically necessary** if the medical appropriateness criteria are met. **(See Medical Appropriateness below.)**
- Mitoxantrone for the treatment of prostate cancer is considered **medically necessary** if the medical appropriateness criteria are met. **(See Medical Appropriateness below.)**
- Mitoxantrone for the treatment of nonlymphocytic leukemia (ANLL) is considered **medically necessary** if the medical appropriateness criteria are met. **(See Medical Appropriateness below.)**
- Mitoxantrone for the treatment of breast carcinoma is considered **medically necessary** if the medical appropriateness criteria are met. **(See Medical Appropriateness below.)**
- Mitoxantrone for the treatment of non-Hodgkin's lymphoma is considered **medically necessary** if the medical appropriateness criteria are met. **(See Medical Appropriateness below.)**
- Mitoxantrone for the treatment of other conditions/diseases, including, but not limited to, the following: acute lymphoblastic leukemia and primary progressive multiple sclerosis is considered **investigational**. **(See Applicable Tennessee State Mandate Requirements below.)**

See also: [General Policy for Multiple Sclerosis](#)

MEDICAL APPROPRIATENESS

- Mitoxantrone is considered **medically appropriate** for the treatment of **ANY ONE** of the following:
 - Secondary (chronic) progressive, or progressive relapsing, or worsening relapsing-remitting multiple sclerosis
 - Prostate cancer with **ALL** of the following:
 - The agent is used in combination with corticosteroids
 - Initial palliative treatment of pain related to advanced hormone- refractory prostate cancer
 - Acute nonlymphocytic leukemia (ANLL) (includes myelocytic, promyelocytic, monocytic, erythroid) in adults (18 years or older) when used as combination therapy
 - Locally advanced or metastatic breast carcinoma when used alone or in combination with other agents
 - Non-Hodgkin's lymphoma when used as a component of combination therapy

APPLICABLE TENNESSEE STATE MANDATE REQUIREMENTS

Tennessee State law requires coverage of off-label indications of Food and Drug Administration (FDA) approved drugs when the off-label use is relative to life-threatening illnesses, such as cancer, AIDS, and coronary heart disease and recognized in one of the standard reference compendia (As defined in the statute: The United States Pharmacopoeia Drug Information, The American Medical Association Drug Evaluations, & The American Hospital Formulary Service Drug Information) or in the medical literature. This law is applicable to all fully insured members. The law is not applicable to self-funded accounts, but coverage for off-label uses may be provided based on the contractual agreement. **See Benefit Summary Specialty Pharmacy Tab.**

- Drugdex recognizes the use of mitoxantrone in the treatment of:
 - Children with acute myeloid leukemia when used as combination therapy
 - Liver carcinoma
 - Ovarian cancer
- The NCCN Drugs & Biologics Compendium recognizes the use of mitoxantrone for additional uses beyond the FDA-approved labeling in the treatment of the following conditions (Refer to the NCCN Drugs & Biologics Compendium or NCCN Clinical Practice Guidelines for detailed recommendations):
 - Classical Hodgkin lymphoma
 - Lymphocyte predominant Hodgkin lymphoma

ADDITIONAL INFORMATION

For appropriate dosage information, contraindications, precautions, warnings, and monitoring information, please refer to one of the standard reference compendia (e.g., The American Hospital Formulary Service Drug Information).

No controlled studies were found in the published literature that validate the use of Mitoxantrone for the treatment of other conditions/diseases.

SOURCES

Drugs for breast cancer. (2005, January). *Treatment Guidelines from The Medical Letter*, 3 (Issue 29), 1-6.

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National Comprehensive Cancer Network. (2009). NCCN Drugs & Biologics Compendium[™]. *Mitoxantrone*. Retrieved July 16, 2009 from http://www.nccn.org/professionals/drug_compendium/mainpage.aspx.

U. S. Food and Drug Administration. (2008, August). Center for Drug Evaluation and Research. FDA Label Information. *Novantrone®*. July 15, 2009 from http://www.accessdata.fda.gov/drugsatfda_docs/label/2009/019297s030s031lbl.pdf.

EFFECTIVE DATE 12/12/2009

ID_BT



Pharmaceutical Decision Support Tree

Mitoxantrone (Novantrone[®])

1. Is the requested medication being used to treat acute lymphoblastic leukemia or primary progressive multiple sclerosis?

 If yes, this does not meet medical necessity and/or medical appropriateness criteria
 If no, go to question #2
2. Is the agent being used to treat secondary (chronic) progressive, or progressive relapsing, or worsening relapsing-remitting multiple sclerosis?

 If yes, this satisfies medical necessity and medical appropriateness criteria
 If no, go to question #3
3. Is the agent being used in combination with corticosteroids as initial palliative treatment of pain related to advanced hormone refractory prostate cancer?

 If yes, this satisfies medical necessity and medical appropriateness criteria
 If no, go to question #4
4. Is the agent being used in combination with other agents for the treatment of acute nonlymphocytic leukemia (ANLL) (includes myelocytic, promyelocytic, monocytic, erythroid) in adults (18 years or older)?

 If yes, this satisfies medical necessity and medical appropriateness criteria
 If no, go to question #5
5. Is the agent being used alone or in combination with other agents for the treatment of locally advanced or metastatic breast carcinoma?

 If yes, this satisfies medical necessity and medical appropriateness criteria
 If no, go to question #6
6. Is the agent being used as a component of combination therapy to treat Non-Hodgkin's lymphoma?

 If yes, this satisfies medical necessity and medical appropriateness criteria
 If no, this does not meet medical necessity and/or medical appropriateness criteria