Vincristine (Oncovin)

Vincristine (Oncovin) is an antineoplastic medication that prevents cell division. The medication is indicated to help treat leukemias, lymphomas, and certain solid tumors. Side effects include peripheral neuropathy and paralytic ileus. Unlike vinblastine (Velban), vincristine does not cause bone marrow suppression. Since the medication is a vesicant and may only be administered intravenously, infusion through a central venous line by a specially trained nurse is preferred.



PLAY PICMONIC

Mechanism

Vinca Alkaloid
Van Alkaloid-Altoids
As a vinca alkaloid, vincristine is a derivative of Vinca rosa. The drug blocks mitosis during the metaphase of cell division. This action prevents the replication of cells and stops cellular growth.

Inhibits Microtubules
Inhibiting-chains on Microtube
Vincristine inhibits microtubules from moving chromosomes during metaphase of cell division. The medication binds with tubulin, a component of microtubules, to prevent synthesis and trigger apoptosis. By inhibiting microtubules, vincristine causes cell death.

Indications

Leukemias
Leukemia-Luke
Since this medication does not affect bone marrow, vincristine is indicated to help treat leukemias (blood cancers). The drug is a part of the chemotherapy regimen "CHOP," which also includes cyclophosphamide, hydroxydaunorubicin, and prednisone (refer to the Picmonic "Prednisone (Glucocorticoids)"). The drug inhibits cell division and prevents cancer progression.

Lymphomas
Lime-foam
Vincristine is indicated in the treatment of lymphomas and some solid tumors, such as Wilms’ tumor. Used with other chemotherapy medications, the drug causes apoptosis of tumor cells and prevents the spread of cancer.

Side Effects

Peripheral Neuropathy
Purple-wavy Neuron-extremities
Since vincristine is toxic to peripheral nerves, administration of the drug may cause peripheral neuropathy. The medication disrupts neurotubules by binding to the protein tubulin. This action injures neurons by inhibiting the structures required for axonal transport of enzymes and organelles. Symptoms of sensory or motor nerve injury include decreased reflexes, weakness, and sensory loss. Since vincristine does not enter the brain, there are minimal CNS side effects. As the dose-limiting side effect, peripheral neuropathy should be monitored by assessing the patient's hand grips and Achilles reflex.

Paralytic Ileus
Wheelchair Eel
Vincristine may cause paralytic ileus by injuring the autonomic nerves of the body. By affecting the autonomic nerves, the medication inhibits the neuronal transmission between the brain and the intestines. Instruct the patient to report changes in bowel habits. Discontinuing the medication will reverse the effects of paralytic ileus.

Sign up for FREE at picmonic.com

Considerations

Vesicant

Vesicle-ant

Since vincristine is poorly absorbed via oral route, the medication is only administered intravenously. As a vesicant, the drug will cause severe skin irritation and extravasation will lead to local tissue necrosis. The preferred route to administer the medication is through a central line by a specially trained nurse. The patient should be closely monitored while receiving IV vincristine and assessed for complications. The antidote for IV infiltration of vincristine is hyaluronidase.

Sign up for FREE at picmonic.com