

FDA approves first therapy for high-risk neuroblastoma Unituxin (dinutuximab)

Neuroblastoma is a cancer that develops from immature nerve cells found in several areas { most commonly arises in and around the adrenal glands can also develop in other areas of the abdomen and in the chest, neck and near the spine } of the body. Neuroblastoma most commonly affects children age 5 or younger (males more often). (1)(2)

Some forms of neuroblastoma go away on their own, while others may require multiple treatments. (2)

On **March 10, 2015** The U.S. Food and Drug Administration approved Unituxin (dinutuximab) as part of first-line therapy for pediatric patients with **high-risk neuroblastoma**. (1)

Unituxin is a chimeric GD2-binding monoclonal antibody that binds to the surface of neuroblastoma cells manufactured by **United Therapeutics**. Unituxin is being approved for use as part of a multimodality regimen, including surgery, chemotherapy and radiation therapy for patients who achieved at least a partial response to prior first-line multi agent, multimodality therapy. (1)(3)

An open-label, randomized (1:1) trial conducted in 226 patients aged 11 months to 15 years (median age 3.8 years). Prior to enrollment, patients achieved at least a partial response to prior first-line therapy for high-risk neuroblastoma consisting of induction combination chemotherapy, maximum feasible surgical resection, myeloablative consolidation chemotherapy followed by autologous stem cell transplant, and received radiation therapy to residual soft tissue disease. Patients randomized to the Unituxin/13-cis-retinoic acid (RA) arm (Unituxin/RA) received up to five cycles of Unituxin in combination with alternating cycles of granulocyte-macrophage colony stimulating factor (GM-CSF) and interleukin-2 (IL-2) plus RA, followed by one cycle of RA alone. Patients randomized to the RA arm received up to six cycles of RA monotherapy. This study demonstrated an improvement in event-free survival and overall survival in patients in the Unituxin/RA arm compared to those in the RA arm. (3)(4)

Safety data was evaluated in 134 patients reported the most common adverse drug reactions ($\geq 25\%$) in the Unituxin/RA group were pain, pyrexia, thrombocytopenia, lymphopenia, infusion reactions, hypotension, hyponatremia, increased alanine aminotransferase, anemia, vomiting, diarrhea, hypokalemia, capillary leak syndrome, neutropenia, urticaria, hypoalbuminemia, increased aspartate aminotransferase, and hypocalcemia. The most common serious adverse reactions ($\geq 5\%$) in the Unituxin/RA group were infections, infusion reactions, hypokalemia, hypotension, pain, fever, and capillary leak syndrome. (3)(4)

A multicenter, single arm safety study of dinutuximab in combination with GM-CSF, IL-2 and RA. In this study, adverse events of all CTCAE (Common Terminology Criteria for Adverse Events) grades and laboratory data were systematically and comprehensively collected. Of 104 patients enrolled and treated in Study 3, 77% of patients completed study therapy. In general, the adverse reaction profile of dinutuximab observed in this study was similar to that observed in previous studies. The following adverse reactions not previously reported in the previous studies were reported in at least 10% of patients in this study : nasal congestion (20%) and wheezing (15%). (3)

After going through the existing literature and the up to date information regarding dinutuximab we find that such agent will constitute an important factor in the treatment of neuroblastoma but further studies and experiences are needed to better judge its safety and efficacy.

References:

- 1) Neuroblastoma ,<http://www.mayoclinic.org/diseases-conditions/neuroblastoma/basics/definition/con-20027487> , last accessed 24/3/2015
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- 3) HIGHLIGHTS OF PRESCRIBING INFORMATION ,http://www.accessdata.fda.gov/drugsatfda_docs/label/2015/125516s000lbl.pdf , last accessed 24/3/2015
- 4) FDA Approves Unituxin ,<http://www.drugs.com/newdrugs/fda-approves-unituxin-dinutuximab-pediatric-risk-neuroblastoma-4187.html> , last accessed 24/3/2015

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