TANTIA UNIVERSITY JOURNAL OF HOMOEOPATHY AND MEDICAL SCIENCE
www.tjhms.com

REVIEW ARTICLE

NEUROBLASTOMA: A CHILDHOOD CANCER WITH ITS HOMOEOPATHIC APPROACH

Deepti Sharma
Ph. D Scholar, Tantia University, Sri Ganganagar, Rjasthan

Received- 11/11/2023
Revised- 15/12/2023
Accepted– 20/12/2023

Key Word-
Neuroblastoma, cancer, staging, metastasis, discoloration, prognosis, survival rate.

Corresponding Author:-
Deepti Sharma
Ph. D Scholar, Tantia University, Sri Ganganagar, Rjasthan

Abstract

This article is an attempt to show how painful disease is Neuroblastoma, its effect on children and how much are the chances of children surviving. It is a disease of young children, the most common cancer in infants, and its prognosis worsens with age. There are no specific risk factors; therefore, diagnosis depends on the clinical trial and related research.

INTRODUCTION

In cancer, the cells of the body grow in very high and controlled growth. Cancer cells overlap the normal cells of the body. Cancer can occur in any cell of the body, and cancer can spread to any part of the body. Cancer that develops in children is often different from the cancer that develops in adults. Neuroblastoma develops in early forms of immature nerve cells. It is an embryonal malignancy belongs to sympathetic systema nervosum of neuroblasts (pluripotent sympathetic cells) which are presumably found in embryo or fetus. This type of cancer is most common in infants and children under the age of 10. It most often starts in one of the adrenal glands, but can also develop in the spine, neck, chest, or abdomen[1]. Not all tumors of the

autonomic nervous system in children are malignant. However, there are many tumors that contain both benign and cancerous cells in one tumor[2]. Such as Ganglioneuroma has non cancerous cells while Ganglioneuroblastoma has both cancerous and non-cancerous parts, major problem in the prevention of neuroblastoma is that the causes of neuroblastoma are not clear yet.

EPIDEMIOLOGY

Neuroblastoma is usually an early childhood disease. It is the third most common cancer of children after blood cancer and brain cancer; also, it is the most common solid cancer of extra cranial space[3]. The rate of incidence of childhood cancer in India is ranges from 38-124 per million children/year. Neuroblastoma may be a malignancy of infancy, affecting ≈1 in 7000 children [4]. The maximum incidence - 55.2 per 1 million - is observed in children of the first year of life. White children have a slightly higher incidence (25%) than black children[5]. A very low percentage of neuroblastoma patients are genetically predisposed to disease with an autosomal dominant pattern of inheritance[2,6]. In this inheritance model, the mean age of onset is 9 months, compared with the mean age of 22 months in the non-hereditary model[7]. For most children, the etiology of neuroblastoma is largely unknown. Due to the young age of occurrence of neuroblastoma, numerous epidemiological examinations have based on preconceptional and pre-birth occasions. During pregnancy, use of certain medicines and hormones also cause increased risk of neuroblastoma development[8,9].

The highest rates for neuroblastoma were recorded within the US (whites), Israel (Jews), New Zealand (Maori), and France (range, 11–14 per million); intermediate rates occurred in Japan, the United States (blacks), and the United Kingdom (range, 7–9 per million); and least were recorded in India and China (range, 3–5 per million)[10].

In a recent study, it has been told that the chances of getting neuroblastoma increases by 2 times with weight gain [11].Even today there is not much information about the epidemiology of neuroblastoma.

Genetic Changes In Neuroblastoma:

In very few cases, neuroblastoma appears because of genetic changes inherited from a parent. Inherited changes in defined genes account for most cases of hereditary neuroblastoma[12]. The *ALK* oncogenes changes account for most cases of inherited neuroblastoma and mutations in *PHOX2B*, a gene that normally helps nerve cells mature, are

responsible for a small number of inherited neuroblastomas.

Risk Factors

Risk factors for neuroblastoma are age, heredity and congenital anomalies [13, 14]. In very rare cases neuroblastoma can be detected before birth during an ultrasound. Neuroblastoma is here and there discovered coincidentally in young children during tests done to look for other childhood [15]. Most often, neuroblastoma is first detected because of signs and symptoms the child is having.

SIGN AND SYMPTOMS

Neuroblastoma can be represented through lump or swelling in the child's abdomen or neck that doesn't seem to hurt, enlarged belly, not eating or complaining about feeling full, drooping eyelid and small pupil (the black area in the center of the eye) in one eye, eyes that appear to bulge and/or bruising around the eyes, weight loss, pain in bones, lumps or bumps in the skin that may appear blue, problems breathing or swallowing, swelling of the legs or upper chest, neck and face, problems with bowel movements or urinating, problems being able to feel or move parts of the body [16, 17, 18]. Most of the times neuroblastoma is found when a child is brought to the doctor because of his/ her signs and symptoms.

DIAGNOSIS AND STAGING OF NEUROBLASTOMA

If a tumour is suspected, tests will be needed to confirm the diagnosis [19] by medical history, physical examination, biopsies, lab and imaging tests.

- On the basis of examination report two systems for neuroblastoma staging used today, first is the International Neuroblastoma Risk Group Staging System (INRGSS) which has 4 stages [20] and second is the International Neuroblastoma Staging System (INSS) which is based on results from the surgery, includes 4 stages along with a special 4S stage.

Prognostic Markers and Survival rate:

Above mentioned stages decide the prognosis of neuroblastoma, also levels of certain substances in the Serum (blood) can be used to help predict prognosis. Neuroblastoma cells release ferritin, a chemical that is an important part of the body's normal iron metabolism, into the blood, a child with high ferritin levels prone to have an unfavorable prognosis. These prognostic markers decide the child's survival rate.

- Children in the low-risk group have a 5-year survival rate that is higher than 95%, Children in the intermediate-risk group have a 5-year survival rate of around 90% to 95%, and Children in the high-risk group

have a 5-year survival rate around 40% to 50% [21].

TREATMENT

1. Neuroblastoma surgery [22].
2. Chemotherapy for neuroblastoma [23].
3. Radiation therapy for neuroblastoma [24].
4. Stem cell transplant for neuroblastoma [25].
5. Retinoid therapy for neuroblastoma [26].
6. Immunotherapy for neuroblastoma [27].

HOMOEOPATHIC MANAGEMENT OF NEUROBLASTOMA [28]:

1. **Calcarea fluorica-** This homeopathic remedy for most cancers is maximum beneficial for hardened lumps, observed with indurated glands of stony hardness.
2. **Silicea-** This homeopathic treatment in many instances lessens the rigors of most cancers. It is Suited to sarcoma with a thick yellow and putrid discharge.
3. **Conium-** Notable hardness of the invaded glands, with flying stitches in them, aggravates at night. The irritability appears the characteristic.
4. **Condurango-** This homeopathic treatment has a sizable function in most cancers of the belly and lots of types of carcinoma. It modifies the ache.
5. **Plumbum Iodatum-** The hard, unchangeable character, the gradual improvement and the prevalence of painful inflammations are the factors of this treatment.
6. **Arsenicum album-** This homeopathic remedy for most cancers corresponds to the overall phenomena of the cancerous diathesis. Its unique indication in any shape of tumor is the pointy burning and lancinating ache with weak spot and debility.
7. **Thuja-** Suitable for tumor of the orbit. Thuja is used as a precious treatment in sarcoma.
8. **Hydrastis-** It reduces ache and prevents increase and improves the affected person in general. The dyspeptic signs endorse the selection of this treatment. The Hydrastis remedy is one of the excellent acknowledged remedies in most cancers. It corresponds to the most cancers diathesis, the worn jaded look, the sallow complexion hide-sure country of the skin, low spirits, lack of appetite, constipation, in addition to the ulcerative stage.
9. **Radium-** Its use is restrained to the pre increase manifestations while we've such signs as aching pains, itching over the body, pains comparable to a

continual arthritis, apprehension, mentally worn-out and irritable patients.

10. **Carbolic acid-** Has additionally been tremendously encouraged as a treasured inner treatment in most cancers.
11. **Cedron-**Helmuth endorse favourably of this treatment for the piercing pains of most cancers.

CONCLUSION

Notwithstanding the information gave inside, neuroblastoma stays a remedial puzzle. As we are headed to further develop results and endurance, the ideal treatment likewise stays tricky. High-risk neuroblastoma presents an ongoing therapeutic challenge. Homeopathic medicine is a type of medicine based on the philosophy of "like cures like". Homoeopathy has been considered as an effective mode of treatment in the management of cancer. For cancer homoeopathic practitioners aim to stimulate immunity, reduce pain and improve energy and overall well being specially if a person is struggling with the side effects of chemotherapy and radiation.

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How to Cite this Article- Sharma D., Neuroblastoma: A Childhood Cancer With Its Homoeopathic Approach. TUJ. Homo & Medi. Sci. 2023;6(4):39-45.

Conflict of Interest: None **Source of Support: Nil**