NOVEL HOLISTIC APPROACH TO PILOCYTIC ASTROCYTOMA: A CASE REPORT

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ABSTRACT Pilocytic astrocytoma is a benign nature and slow-growing brain tumour in childhood. Localization of tumour could be cerebellum, optic nerve, optic chiasm, hypothalamus, third ventricle region, spinal cord, and temporal lobe. Treatment is frequently gross total surgical excision. A 1-year-old boy patient complained of nystagmus in his left eye and was admitted to our clinic in December 2017. The patient had a healthy full-term delivery and did not report a family history of cancer. Protocol of the Remember Regeneration Therapy Method, a holistic treatment approach, was applied to this patient for 48 months. A reduction in tumour size in patients’ magnetic resonance imaging of the brain scan and nystagmus was determined. Administration of treatment of cases with pilocytic astrocytoma improved the quality of life is very crucial. In addition to clinical improvement, long-term support with no side effects or complications may be valuable in pilocytic astrocytoma.

KEYWORDS Pilocytic astrocytoma, RTM therapy, phytotherapy, complementary medicine.

Background

Pilocytic astrocytoma (PA) is a brain tumour that is more common in children. Pilocytic astrocytomas, the most common cerebellar glioma in children, account for approximately one-third of all gliomas. More than 30% of them are located in the cerebellum in the 0–14 age group [1].

In the new World Health Organization (WHO) Classification of Tumors of the Central Nervous System (CNS), the diffuse gliomas include the WHO grade II and grade III astrocytic tumours along with the associated diffuse gliomas of childhood [2].

Pilomyxoid astrocytoma (PMA) classically occurs in the hypothalamic/chiasmatic area in regions affected by pilocytic astrocytomas. PMA is noted histologically for its angiocentric organization of a myxoid matrix and monomorphic bipolar tumour cells [3].

The primary preference for PA treatment is total surgical resection; in most cases, no further radiotherapy or chemotherapy is required [4]. With the current surgical methods, these tumours have a general prognosis and long-term survival rates of up to 80-95% [5]. However, although cerebellar pilocytic astrocytomas (CPA) patients treated with surgery appear to have positive results in the long term, it has still been observed that specific cognitive impairments occur [6].

The Remember Regeneration Therapy Method (RTM) is a holistic approach that is a therapy model in which some traditional applications (cupping, acupuncture, ozone, etc.) are integrated with phytotherapy against physiopathological changes in the human body. Diseases are considered to be a reflection of epigenetic changes resulting from gene-environment inequality to the phenotype [7].

The therapy policy in the RTM model aims to restore human health by improving structures and functions that deteriorate due to epigenetic changes. Given epigenetic modifications, it is a wise choice that pathological development of the formation of diseases can theoretically be regulated by the RTM method. As with the RTM model, epigenetic modifications and irregularities were normalized, and clinical improvement was observed in individuals when specific therapy was applied [7].

Herein, we report a case of a 1-year-old boy who had pilocytic astrocytoma and was treated with a holistic approach at our clinic.
Case Report

All procedures involving human participants’ studies followed the institutional and national research committee’s ethical standards, the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

In December 2017, a 1-year-old boy was referred to our clinic with complaints of nystagmus in his left eye. The patient’s neurological examination was normal at admission, except for nystagmus. He had a history of healthy full-term delivery. There was not a family history of cancer, familial genetic disorders, food or drug allergies, or tuberculosis. The patient had not received any secondary prevention measures for cerebrovascular disease. He had not had any infectious diseases or illnesses in his recent history.

According to the patients’ magnetic resonance imaging (MRI) of the brain scan (28 October 2017); a solid mass with prominent homogeneous contrast enhancement was detected, which became evident in the sheath in both optic nerves and encircled the optic nerves 360 degrees, reaching up to 5 mm on the left in the thickest part. The brain biopsy was diagnosed as “pilocytic astrocytoma” (31 October 2017). On April 12th 2018, an MRI report showed that the nodular component of the lesion around the left optic nerve was resected in comparison with the preparative MRI scan examination. However, no changes in the size and shape of the mass around both optic nerves were detected. MRI report on October 19th 2018 showed moderate regression in solid mass around the optic nerve. Additionally, dimensional regression was observed in optical gliomas on both optic nerves in the follow-up MRI report (26.04.2019). In addition, there were focal hyperintense areas in periventricular white matter in both parietals compared to the first MRI report (Figure 1).

When he applied RTM therapy in December 2017, the RTM protocol included the RTM phytotherapy products, rectal ozone therapy (50 times in 48 months), laser therapy (50 times in 48 months), and magnetic field therapy (50 times in 48 months). After 48 months of application of the RTM protocol, the patient improved his medical examination, and nystagmus was reduced. The case was cured with RTM consisting of different holistic approaches and phytotherapeutic agents in 48 months.

RTM Protocol

1. RTM Phytotherapeutics
   a. DVD.Reg (A mixture with thistle)
   b. ISY.Reg (A mixture with nettle leaf)
   c. IST-GLIO

2. Rectal ozone therapy (50 sessions)

3. Magnetic field therapy (50 sessions)

4. Laser therapy (50 sessions)

Follow-up period

The patient was asked for a check-up once every three months. Medical examination and other practices were performed. No adverse effects of RTM therapy were observed. The treatment exhibited a desirable safety outline and was associated with a reasonable response rate of pleasant at months 48.

Discussion

CPA is approximately 30% of all pediatric central nervous system (CNS) tumours, forming the second pediatric brain tumour after medulloblastomas in childhood [8,9]. PA is a World Health Organization grade I neoplasm with a predictable benign course and a 10-year survival rate exceeding 95% [10]. Pilocytic astrocytomas show placement throughout the neuraxis, including optic chiasm, hypothalamus, cerebral hemisphere, and brainstem; 80% of cases are localized in the cerebellum [11]. In a single-centre study conducted in Korea, PA was found to be most common in primary brain tumours in the <20 age group. However, it is noteworthy that optic chiasmatic-hypothalamic and brainstem-entrenched tumours were relatively more frequent in patients under 20 years of age [12]. In a prospective study of childhood low-grade glioma (LGG) accomplished by The Children’s Cancer Group and Pediatric Oncology Group, the 5-year progression-free survival (PFS) was 90% with gross total resection (GTR) and 45–65% with a residual tumour. In addition to these findings, chiasmatic-hypothalamic tumours displayed lower PFS than cerebellar tumours [13].

In a long-term follow-up of the multicenter, multidisciplinary treatment cohort study, the efficacy of vincristine + carboplatin and overall response to chemotherapy was observed in 91.9% of the children with LGG [14].

A woman with astrocytoma was given an integrative treatment instead of conventional treatment, and after 24 months of phytotherapy, no tumours were observed, both radiologically and clinically [15].

Epigenetic adjustments are essential in many diseases, including cancer [16,17]. Because the phytotherapeutic products included in the RTM therapy protocol contain bioactive dietary components, they assist in correcting disorders in epigenetic changes [7]. Today, the importance of epigenetics has become
more apparent with the increase in information confirming the association of genetics and epigenetics, especially epigenetic processes that play a crucial role in cancer [18].

Glioblastomas show surprisingly cellular heterogeneity with stem-like glioblastoma stem cells (GSC). Furthermore, there has been increased evidence that GSCs play an essential role in tumor growth and response to treatment. Hence, the dizzying technological advances in the world of modern medicine, containing single-cell RNA sequencing (scRNA-seq) methodologies, confirm the presence of a GSC population in glioblastoma tumours. That is likely to help increase treatment options and help us find what is most beneficial to the patient [19]. Therefore, the strategy in the treatment of patients with glioma should be evaluated in all respects, parallel to developments in modern technologies, the benefits/dangers of a large number of traditional remedies specific to patients, such as surgery, chemotherapy and radiation therapy, and complementary therapies [20].

The RTM strategy is formally keen on an original holistic method that builds on the relationships between performances, such as DNA methylation and histone modification. For this purpose, different remedy arrangements comprise of several holistic medicine methods such as acupuncture, ozone therapy, cupping, magnetic field therapy, hirudotherapy, and phytotherapy. However, since each disease has a different pathological mechanism and severity, the disease in each individual also shows the character and specificity of one of these combinations. Therefore, the training tracks’ main goal for future medical changes should be to observe how mutations in genes with modified epigenetics pay to phenotype in diseases [7].

In this case report, the RTM protocol consisting of phytotherapy, laser therapy, rectal ozone, and magnetic field therapy was applied to a 1-year-old child with pilocytic astrocytoma. As a result, the tumour size was significantly reduced in the control MRI of the brain scan, and his nystagmus was decreased. Besides, no side effects or complications were detected in the patient during this process.

In a study with a similar treatment approach, common plaque psoriasis cases recovered successfully with the RTM protocol without any side effects, and no recurrence was observed after six years of follow-up. We have been hopeful that its impact on disease epigenetic modification can be corrected by the treatment strategy in the RTM protocol. (Yasar, Uysal, Demirel, in press).

The literature states that the overall treatment approach in patients with pilocytic astrocytoma is total resection, chemotherapy, and radiotherapy options, not a case treated with this type of procedure [22-24]. Although this type of treatment approach is severe, many diseases [7] are taken into consideration in the future of the treatment of the possibility of difficulty in cancer cases will be an obvious alternative. However, the exact efficacy of this therapy is still largely unknown, and more studies are needed.

**Conclusion**

A new holistic approach to treating RTM protocol with the advantage of the absence of side effects and complications can positively contribute to the healing process of diseases. In conclusion, further broad-based functional research is needed to identify and validate epigenetically regulated genes with RTM protocol, which helps to provide clinically and radiologically positive development in patients with pilocytic astrocytoma with phytotherapeutic agents and CAM applications.

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**Competing Interests**

The authors declared that this case report was done independently without any conflict of interest of any organizations that would lead this case report to bias.

**Ethical statement**

This is a retrospective case report without the use of any sample from patient, so ethical approval can be waived. Written informed consent was obtained from the patient’s legal guardian.

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