European Journal of Innovation in Nonformal Education (EJINE)
Volume 3 | Issue 5 | May - 2023 ISSN: 2795-8612

Epidemiology of the Primary Spinal Cord Tumors

Rahmatov Karim

A B S T R A C T

Epidemiological and statistical studies around the world, as a rule, focus on malignant cases in various structures of the central nervous system, which is why there are no true data on benign neoplasms of the spinal cord and the central nervous system as a whole .

Despite the existence of several projects in the world to study CNS neoplasms, the epidemiological data of primary spinal cord tumors are poorly studied, there are no uniform indicators that could represent the true frequency and increase in the incidence of primary spinal cord tumors. There are few reports in the scientific literature devoted to the study of the epidemiology of POSM and the research data vary greatly, since POSM has been studied in different countries, regions and localities as part of all CNS tumors or in separate nosological forms depending on localization and age groups.

A R T I C L E I N F O

Article history:
Received 21 Mar 2023
Received in revised form
22 Apr 2023
Accepted 25 May 2023

Keywords: Epidemiology, tumor, spinal cord, statistics.

The prevalence of brain tumors in relation to POSM from among all diseases of the central nervous system in the studies of a number of authors was different, so in the work of Razdolsky I.Ya, the ratio of OGM to POSM was 1:9, whereas in the studies of Arseni K., Simonescu M. this indicator varied from 1:4 to 1:6. When studying the data of 1,639 patients with pathologically confirmed POSM published in the People's Republic of China (PRC), the average ratio of brain and spinal cord tumors was 1:8 [11,1,23]. According to the data of foreign and domestic literature, POSMS account for about 4-16% of all emerging tumors from the central nervous system [7]. According to the results of long-term, randomized studies that were carried out in countries with high economic growth, the incidence of MSM is the highest. In the USA, more detailed data on the incidence of POSM became available by the adoption of Law No. 107-260 starting in January 2004, after the inclusion of data on benign formations in the registers for the study of primary tumors of the Central nervous System. In the study of the incidence of POSM in the USA in 2004-2007, published by Linh M. Duong et al. In 2012, according to CBTRUS, the total incidence of MSM (benign and malignant) in these years was 0.97 per 100,000 population. It draws attention to the fact that, among all the studied, 2576 cases of malignant MSM and 9136 cases of benign MSM were found, respectively, the incidence rate of good-quality MSM was 0.76 per 100,000 population and significantly exceeded the indicators for malignant MSM (0.22 per 100,000 population). The largest number of POSMS were observed in elderly and senile persons (from 2.0 to 2.5 detected per 100,000), and the lowest at the age of 0 to 9 years(0.2 per 100,000 population) [31]. Similar indicators of the incidence of MSM were given by researchers in different countries of the world: in Croatia - 1.60 per 100,000 population per year, in France – 1.20 per 100,000 population per year, Estonia - 0.80 per 100,000 population per year, which once again confirms the rarity of this pathology [26].

There is no consensus among researchers on the incidence of MSM among the male and female populations, and these data vary dramatically. In the USA from 19980 - 2002 according to Schellinger et al. POSM was diagnosed in 55% of women, compared with 45% in men, the same data is cited by Engelhard et al in 2010 (56.7% in women and 43.3% in men) and Linh

M. Duong et al. in 2012 (60% for women and 40% for men) [31,41,18]. According to the described studies the incidence of male and female population is different, women were significantly more likely to be sick men. In Japan, when studying the data of 678 patients from 2000 to 2009, it is of particular interest that POSM was more common in men - 55.6% than in women - 44.4%. Similar research data from China (men - 60.3%, women - 39.7%), Taiwan (men - 56.5%, women - 43.5%), suggests that in Asian countries, POSM is mostly often found in men, whereas in non-Asian countries, women prevail [47,19]. According to some authors of the POSM, there is a predominant localization depending on age, so in childhood and adolescence, more than half of the tumors are diagnosed in the upper cervical spinal cord and the roots of the ponytail, in the elderly and senile age -almost up to 90% are located in the thoracolumbar spinal cord [41]. In patients aged 20-50 years, more than 50% of the cases are located in the thoracic region, up to 20% of cases are diagnosed in the cervical region and in 30% of the tumors are located in the lumbar spinal cord [8].

Spinal cord tumors growing from the whitest matter are classified as intramedular tumors, which make up from 30 to 50% of the POSM, but at the same time do not exceed 3% of all tumors of the central nervous system. They are often manifested in childhood (up to 35%), and extramedullary – in adults [4,5]. The frequency of occurrence in the population averages 0.5 in women and 0.3 in men per 100,000 population per year. It is known that 90% of intramedullary POSMS are represented by gliomas of low malignancy, which can be permanently removed. The most common POSMS among intramedullary spinal cord tumors are ependymoma in (63-65%) cases, astrocytomas in (24-30%) cases and at the same time account for 4/5 of all intramedullary spinal cord tumors. Other POSMS, such as glioblastoma, occur in (7.5%) cases, oligodendroglioma in (3%) cases and other tumors up to (2%) cases [7]. Some IMO are associated with genetic diseases, such as Von Hippel-Lindau disease (VHL), which causes hemangioblastoma and neurofibromatosis type 2 (NF-2). Intramedular tumors are observed in 19% of patients with NF-2 and 20% with VHL disease [38].

Ependymoma of all glial intramedullary neoplasms of the spinal cord is up to 65% among the adult population and more than 10% of all spinal cord tumors. The average incidence of ependyma in the USA in 2012 was 1.15 per 100,000 population per year, and women slightly prevailed (women - 1.06 per 100,000 population per year, men -1.24 per 100,000 population per year) [44]. There are various histological subtypes of ependyma and most of them can be included in the second type of malignancy, classified by WHO. A number of authors claim that end-thread ependymomas can be attributed to extramedullary tumors and account for up to 40% of spinal cord ependymomas [16]. At the same time, according to literature data, spinal subependymomas can be diagnosed very rarely and often in combination with type II neurofibromatosis [4].

Among IMO, astrocytoma ranks second in frequency in the adult population and is up to 30% after epindema. At the age of 10, astrocytomas reach up to 90% of all glial tumors of the spinal cord, and this percentage significantly decreases to 50% by the age of 15 [25].

Among spinal astrocytomas, about 75% are benign and 25% are malignant tumors [8].

Hemangioblastomas (GAB) are small benign, profusely vascularized single neoplasms that rarely go beyond one or two segments, most often located on the posterior or posterolateral surface of the spinal cord. Among all spinal cord IMO, GABA are from 3-8% and in about 30% of cases are associated with other diseases, such as von Hippel-Lindau disease [6]. These tumors are often found in (40-60%) cases with spinal cord cysts having significant dimensions and spreading along the diameter of a solid component of the tumor tissue [3].

The most common up to (90%) of all spinal cord tumors are extramedullary localization and are detected up to 1.2 cases per 100,000 population per year. Tumors such as neurinoma, neurofibroma, meningioma are found in 80% of all extra-medullary spinal cord tumors of intradural localization.

In a comprehensive study of 1,322 patients with intradural spinal cord tumors in the Mayo clinic, the majority of patients had revealed neurinomas (29%) and meningiomas (26%), intramedullary gliomas in 22%, extradural sarcomas in 12%, hemangioblastoma, chordoma, epidermoid cysts in 11% of patients [3].

According to the data of medical specialized institutions of Ukraine in 2005, among the treated 489 patients with intradural extramedular tumors, meningiomas occurred from 16.6 to 33% in children and up to 60% in elderly patients. Depending on the age groups, neurinomas accounted for from 25 to 50% of all tumors, in elderly patients - 25%, in children - no more than 10-11.1% [12].

Meningiomas are slow–growing tumors from the cells of the arachnoid membrane, soft and hard shell, occurring most often in middle-aged and elderly people from 50 to 70 years, in childhood these tumors are practically not found (no more than 3%), among patients they are more common in women (75-83%). In a study of 7,148 patients in the USA from 2004 to 2010, the majority (96.1%) of spinal meningiomas were WHO grade I, then WHO grade II (2.5%) and WHO grade III (1.4%) [45]. Combined with neurofibromatosis type 1 (NF I), multiple meningiomas account for up to 1-2% [2].

Tumors from the roots of spinal nerves account for approximately 25%-30% of the harm of all extracellular spinal cord tumors in adults and 14% in children [13]. Neurinomas are more common in middle-aged patients (30-50 years), while meningiomas occur in middle-aged and elderly patients [19].

Dysembriogenetic tumors (lipomas, dermoids, epidermoids, teratomas) are more common in children than in other age groups (up to 5%), and in adults they account for less than 2% of all spinal cord tumors and are more often located in the lumbar spine. The embryonic occurrence of these neoplasms causes a frequent combination of the tumor with other congenital malformations of the spine and spinal cord.

Extradural POSM. Most of the authors currently in the POSM group include ex-traditional spinal cord tumors. The peculiarities of primary extradural tumors in comparison with intradural ones are their histogenetic diversity, large size, the prevalence of malignant forms and pronounced structural changes of the vertebrae. According to some data, extradural neoplasms account for up to 32% of all extramedullary tumors [13].

Literatures

1. Gafforov A. U., Asilova S. U., Teshaev A. A. Analysis of reparative after surgical treatment of diaphyseal fractures of the shin bones //Art of Medicine. International Medical Scientific Journal. – 2021. – T. 1. – №. 3.
2. Gafforov A. U., Asilova S. U., Teshaev A. A. Analysis of reparative after surgical treatment of diaphyseal fractures of the shin bones //Art of Medicine. International Medical Scientific Journal. – 2021. – T. 1. – №. 3.
3. Gafforov A. U., Asilova S. U., Teshaev A. A. ANALYSIS OF REPARATIVE AFTER SURGICAL TREATMENT OF DIAPHYSEAL FRACTURES OF THE SHIN BONES //Art of Medicine. International Medical Scientific Journal. – 2021. – T. 1. – №. 3.
4. Gafforov A. U., Asilova S. U., Teshaev A. A. Indicators X-ray Densitometric studies in fractures of long tubular bones with the use of plasma lifting in an experimental study //British Medical Journal. – 2021. – T. 1. – №. 1.2.
5. Gafforov A. U., Asilova S. U., Teshaev A. A. Indicators X-ray Densitometric studies in fractures of long tubular bones with the use of plasma lifting in an experimental study //British Medical Journal. – 2021. – T. 1. – №. 1.2.
6. Halimovich M. H., Ozodovich N. S. Improvement of surgical treatment of patients with combined degenerative-dystrophic pathology of the hip joint and spine with prevalence of manifestations of coxarthrosis //British Medical Journal. – 2021. – T. 1. – №. 1.2.
7. Khamraev B. U., Sh A. S. Our experience of treatment of femor fractures by the method of intramedular locking osteosynthesis //Asian journal of Pharmaceutical and biological research. – 2021. – T. 10. – №. 2.
8. Mirzamurodov H. H. et al. OPTIMIZATION OF TOTAL HIP ARTHROPLASTY FOR DYSPLASTIC COXARTHROSIS //Новый день в медицине. – 2020. – №. 4. – С. 667-672.
9. Mirzamurodov H. H. New approaches to treatment of patients with coxovertebral syndrome //Asian journal of Pharmaceutical and biological research. – 2021. – T. 10. – №. 2. – С. 9-19.

10. Mirzohidovna H. E. Obesity as a risk factor for recurrent polycystic ovary disease //Asian journal of pharmaceutical and biological research. – 2021. – Т. 10. – №. 3.
11. Nematov D. et al. Molecular dynamics simulations of the DNA radiation damage and conformation behavior on a zirconium dioxide surface //Egyptian Journal of Chemistry. – 2019. – Т. 62. – №. The First International Conference on Molecular Modeling and Spectroscopy 19-22 February, 2019. – С. 149-161.
12. Ozodovich N. S. Analysis of morphological changes in the bones after osteomyelitis and features of treatment methods //Asian journal of Pharmaceutical and biological research. – 2021. – Т. 10. – №. 2.
13. Shavkatovich A. S. Prevention of possible complications before and after total end protestation of the combine //European Journal of Business and Social Sciences. – 2019. – Т. 7. – №. 5. – С. 1413-1422.
14. Yunusovich Y. S. Traumatic Significance of Determining the Level of Antibiotic Activity in Fatty Biosynamens //Central Asian Journal of Medical and Natural Science. – 2022. – С. 112-117.
15. Ziyadullaev A., Nurmonov S., Parmonov A. Study of the catalytic reaction of acetylene with cyanuric acid //Journal of science. Lyon. – 2020. – №. 8-1. – С. 11-14.
16. Акрамов В. и др. Эндопротезирование тазобедренного сустава при переломах шейки бедренной кости //Журнал проблемы биологии и медицины. – 2017. – №. 3 (96). – С. 14-16.
17. Акрамов В. и др. Эндопротезирование тазобедренного сустава при переломах шейки бедренной кости //Журнал проблемы биологии и медицины. – 2017. – №. 3 (96). – С. 14-16.
18. Акрамов В. Р. Асептическом Некрозе Головки Бедренной Кости Сравнительный Анализ Отдельных Результатов Эндопротезирования //AMALIY VA TIBBIYOT FANLARI ILMIY JURNALI. – 2022. – Т. 1. – №. 7. – С. 53-57.
19. Ахмедов Ш. Ш. и др. The peculiarities of prophylaxis of pulmonary thromboembolism after total hip endoprosthesis in dysplastic coxarthrosis //Новый день в медицине. – 2020. – №. 2. – С. 53-55.
20. Ахмедова С. М. Возрастные особенности анатомии сердца крысят в раннем постнатальном онтогенезе //International medical scientific journal. – 2015. – С. 40.
21. Ахмедова С. М. Гистотопография стенок сердца крысы в постнатальном онтогенезе //Врач-аспирант. – 2011. – Т. 46. – №. 3.2. – С. 283-288.
22. Ахмедова С. М. Морфологическая характеристика развития стенок сердца крысят //Наука и мир. – 2015. – №. 1-2. – С. 85-87.
23. Ахмедова С. М., Айтжанова А. Е., Сагдуллаева М. К. К МОРФОЛОГИИ ИЗМЕНЕНИЙ ПОЧЕК ПРИ ЭКСПЕРИМЕНТАЛЬНОМ АЛКОГОЛИЗМЕ //Journal of new century innovations. – 2022. – Т. 16. – №. 2. – С. 166-168.
24. Ахмедова С. М., Якубова Ф. ПОКАЗАТЕЛИ ФИЗИЧЕСКОГО РАЗВИТИЯ У СЛЕПЫХ И СЛАБОВИДЯЩИХ ДЕТЕЙ //Conferencea. – 2022. – С. 103-105.
25. Ахмедова С., Нортоева Н., Нортоев А. Morphological changes in the teeth of adolescent children with hypotireosis : дис. – Тошкент тиббиёт академияси, 2022.
26. Каримов Х., Ахмедова С., Тен С. Морфологическая характеристика развития стенок сердца и их изменения при воздействии пестицидов //Журнал вестник врача. – 2011. – Т. 1. – №. 03. – С. 51-54.
27. Рахматов К. Р. Результаты вертебропластики при лечении больных с патологическими переломами и гемангиомами позвонков //Новый день в медицине. – 2020. – №. 1. – С. 345-346.
28. Хакимов Ш. К., Мухамедов Б. С., Мансуров А. Б. РЕЗУЛЬТАТЫ ХИРУРГИЧЕСКОГО ЛЕЧЕНИЯ АПОФИЗЕОЛИЗОВ ВНУТРЕННЕГО НАДМЫЩЕЛКА ПЛЕЧЕВОЙ КОСТИ У ДЕТЕЙ //Вестник экстренной медицины. – 2022. – Т. 15. – №. 1. – С. 38-43.

29. Хакимов Ш. К., Мухамедов Б. С., Мансуров А. Б. Результаты хирургического лечения апофизеолизов внутреннего надмыщелка плечевой кости у детей: 10.54185/TBEM/vol15_iss1/a6 //ВЕСТНИК ЭКСТРЕННОЙ МЕДИЦИНЫ. – 2022. – Т. 15. – №. 1.
30. Халимова Э. М., Нурханова Н. О., Сулейманова Г. С. Соматический статус женщин с мастопатией в период перименопаузы //Молодежь, наука, медицина. – 2015. – С. 359-361.
31. Ходжанов И. Ю., Хакимов Ш. К., Касымов Х. А. Некоторые ортопедо-косметические аспекты лечения воронкообразной деформации грудной клетки у детей и подростков //Врач-аспирант. – 2012. – Т. 52. – №. 3.4. – С. 531-539.
32. Ходжанов И. Ю., Хакимов Ш. К., Касымов Х. А. Оперативное лечение воронкообразной деформации грудной клеткиу детей и подростков с применением модифицированной пластины //Гений ортопедии. – 2013. – №. 1. – С. 108-111.