



## OUTCOMES AND PROGNOSIS IN OPTIC NEURITIS: LONG-TERM DATA ANALYSIS

Zhalalova D.Z.  
Mansurov Sh.Sh.

Samarkand State Medical University  
<https://doi.org/10.5281/zenodo.14049256>

### ARTICLE INFO

Qabul qilindi: 01- Noyabr 2024 yil  
Ma'qullandi: 05- Noyabr 2024 yil  
Nashr qilindi: 07- Noyabr 2024 yil

### KEY WORDS

*regression analysis, neurological examinations, sclerosis.*

### ABSTRACT

*Optic neuritis (ON) is an inflammatory disease of the optic nerve that is often associated with vision loss and may be a precursor to multiple sclerosis (MS) and other autoimmune diseases. Understanding the long-term outcomes and factors that influence prognosis in patients with ON is key to developing treatment and disease management strategies. This article presents a longitudinal data analysis of 240 patients with ON followed for 5 years.*

### Materials and methods

The study included 240 patients diagnosed with NVD who were followed up from 2015 to 2023. All patients underwent regular ophthalmological and neurological examinations, including visometry, optical coherence tomography (OCT) and magnetic resonance imaging (MRI). The main evaluation criteria were the level of vision recovery, relapse rate and development of multiple sclerosis. Statistical data processing was performed using regression analysis and survival analysis (Kaplan-Meier).

### Results

#### 1. Vision recovery

U Complete vision recovery (to a level of 0.8-1.0 on the Snellen scale) was observed in 150 of 240 patients (62.5%) during the first year after the start of treatment.

U Partial recovery (level 0.5-0.7) was achieved in 60 patients (25%).

In 30 patients (12.5%), significant vision loss (less than 0.5 on the Snellen scale) persisted despite treatment. Statistical analysis showed that early initiation of therapy (within the first two weeks after symptom onset) increased the likelihood of complete vision recovery by 2.2 times (OR = 2.2,  $p < 0.05$ ).

#### 2. Relapse rate

U 80 patients (33.3%) experienced relapses of NIS during five years of follow-up.

U Relapses were most common in patients with concomitant multiple sclerosis (65% of the relapse group).

U Multivariate regression analysis showed that the presence of autoimmune markers significantly increased the risk of relapses (HR = 1.8,  $p < 0.01$ ).

#### 3. Development of multiple sclerosis

> Over five years, 72 patients (30%) were diagnosed with multiple sclerosis, with most

patients being diagnosed within the first two years of follow-up.

> Among patients diagnosed with MS, the relapse rate of NIS was significantly higher (65% versus 15% in patients without MS).

> Survival analysis showed that patients with more severe forms of NVN and significant vision loss at diagnosis had a higher risk of developing MS (HR = 2.4,  $p < 0.01$ ).

### Prognostic factors

Based on the analysis of the data, key prognostic factors influencing outcomes in NVN were identified:

> Patient age: Younger age (under 30 years) was associated with a more favorable prognosis and a lower risk of developing MS (HR = 0.7,  $p < 0.05$ ).

> Presence of autoimmune markers: Patients with autoimmune markers had a higher risk of relapses and developing MS (HR = 1.8,  $p < 0.01$ ).

> Time to treatment: Earlier treatment initiation was associated with better outcomes and a lower likelihood of irreversible vision loss (OR = 2.2,  $p < 0.05$ ).

### Conclusion

Long-term data suggest that optic neuritis has highly variable outcomes, depending on a number of prognostic factors, such as age, presence of autoimmune markers and time of treatment initiation. Early diagnosis and timely initiation of therapy play a key role in improving the prognosis of patients with ON. Regular follow-up and monitoring of patients' condition can reduce the risk of relapses and the development of serious complications, such as multiple sclerosis.

### References:

1. Abdurakhmanovich, B. S., Muratovna, K. A., Azizovich, Y. A., & Botirovich, K. S. Effectiveness Of Surgical Treatment Of High Myopia By Implantation Of Phakic Intraocular Lenses //European Journal of Molecular & Clinical Medicine, 7(03), 2020.
2. Акопова Е.К. Дариоцистит у новорожденных, факторы риска, возбудители, микробный ландшафт другого глаза // Дис. искренне для конкуренции. мед. Поклонники. Краснодар. 2019. 108 б.
3. Арестова Н.Н. Алгоритм хирургического и медикаментозного лечения дакриоцистита у новорожденных //. Российская детская офтальмология. 2013. № 1. С.50-52.
4. Бабаев С.А., Кодирова А.М., Юсупов А.А., Бектурдиев Ш.С., Собирова Д.Б. Наш опыт хирургической коррекции вторичного расходящегося косоглазия у детей // Научно-практический журнал «Перспектива. Восток-Запад, Уфа, 2016, № 3. С.124-126.
5. Бабаев, С. А., Кадирова, А. М., Юсупов, А. А., Бектурдиев, Ш. С., & Сабирава, Д. Б. Наш опыт хирургического исправления вторичного расходящегося косоглазия у детей // Точка зрения. Восток-Запад, (3), (2016). 124-126.
6. Бабаев, С. А., Кадирова, А. М., Садуллаев, А. Б., Бектурдиев, Ш. С., Салахиддинова, Ф. О., & Хамрокулов, С. Б. Эффективность операции фактоэмульсификации с имплантацией интраокулярных линз при зрелых старческих катарактах // Вестник врача, (2017). (3), 23.
7. Большунов А.В., Соболев Э.Н., Федоров А.А., Баум О.И., Омельченко А.И., Хомчик О.В., Щербаков Е.М. Изучение возможности

- усиления фильтра- ции внутриглазной жидкости при неразрушающем лазерном воздействии на склеру в проекции плоской части цилиарного тела (экспериментальное исследование). Вестник офтальмологии. 2013;129(1):22-26. [Bolshunov A.V., Sobol E.N., Fedorov A.A., Baum O.I., Omelchenko A.I., Khomchik O.V., Shcherbakov E.M. The study of opportunity of aqueous humor filtration in- crease after nondestructive laser exposure of sclera in the site of pars plana pro- jection (experimental study). Annals of Ophthalmology = Vestnik oftal'mologii. 2013;129(1):22-26 (In Russ.)].
8. Галеева Г.З. Дифференциальный подход в лечении разных форм неонатального дакриоцистита // Рос. Педиатр. офтальмол. 2013. № 2. С. 22-26.
9. Долиев, М. Н., Тулакова, Г. Э., Кадырова, А. М., Юсупов, З. А., & Жалалова, Д. З. ЭФФЕКТИВНОСТЬ КОМБИНИРОВАННОГО ЛЕЧЕНИЯ ПАЦИЕНТОВ С ЦЕНТРАЛЬНОЙ СЕРОЗНОЙ ХОРИОРЕТИНОПАТИЕЙ // Вестник Башкирского государственного медицинского университета, (2016). (2), 64-66.
10. Жалалова Д.З.Классификационные критерии изменений сосудов сетчатки при артериальной гипертензииЖурнал «Проблемы биологии и медицины» -2022. №1 С - 50-53.
11. Жалалова Д.З.Диагностические критерии оптической когерентной томографии с функцией ангиографии при ишемических заболеваниях органа зрения на фоне артериальной гипертензии Журнал «Проблемы биологии и медицины» -2022. №5 С - 73-78
12. Жалалова Д.З.Оценка маркеров эндотелиальной дисфункции в слезной жидкости у пациентов с артериальной гипертензиейЖурнал «Биомедицина ва амалиет». Тошкент - 2022, Том № ,№. С.