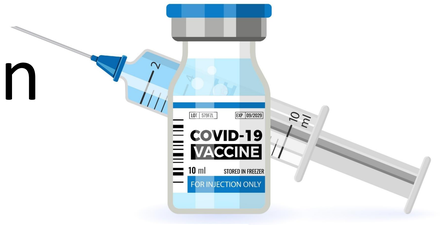


Optic Neuritis post COVID-19 Infection and Vaccination

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Background: Optic neuritis (ON) is a clinical manifestation of central nervous system (CNS) inflammation that most commonly presents with pain, reduction in visual acuity and dyschromatopsia. It is often the first indication of autoimmune demyelinating conditions, however it can also be rarely precipitated following bacterial or viral infections.[1]

Aim: A considerable number of ON cases post COVID-19 infection and vaccination have been published in the literature. The aim is to characterise the symptoms and clinical features of previously reported episodes of ON in these cohorts

Method: A literature search was conducted in 4 databases (Pubmed, Medline, Embase, Google Scholar) to identify relevant case reports and case series.

Descriptive statistics were used to explore study and patient characteristics as well as for analysing the outcomes of pain and biochemical markers.

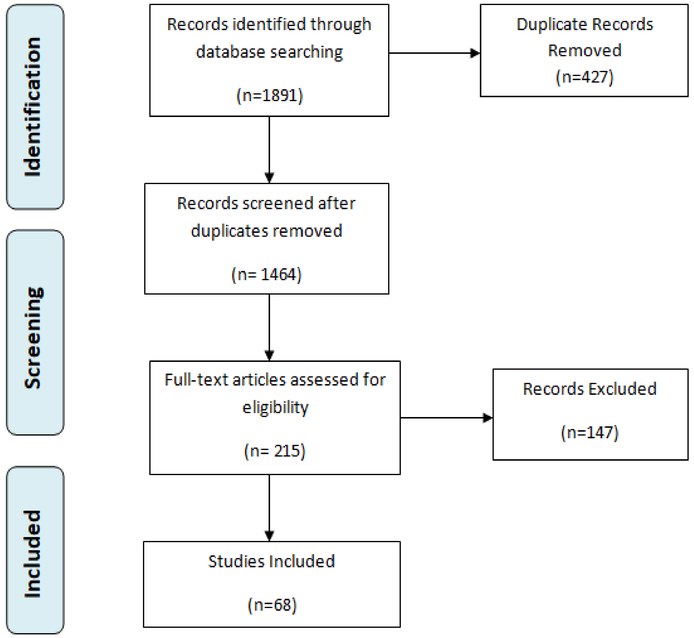
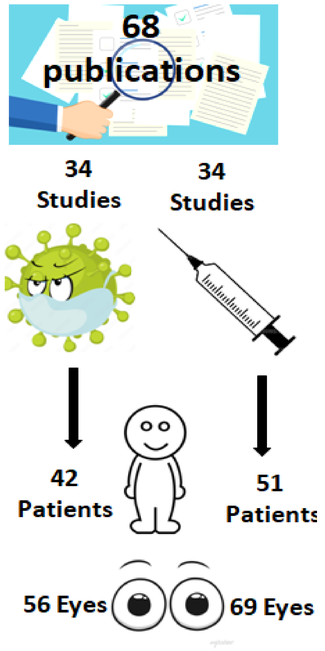


Figure 1 – PRISMA Flowchart [2]

Results



	Infection	Vaccination	P value
Number of eyes	56	69	-
Females (%)	48.8	60.8	0.36
Mean Age (Years)	42.0	44.2	0.60
Bilateral (%)	33.3	35.3	0.84
Mean Latency (days)	14.8	12.3	0.38
Presence of Pain (%)	77.8	75.0	0.80
Visual Acuity (LogMAR)	1.64	0.93	**0.0025**
Oligoclonal bands	3 positive 15 negative	7 positive 8 negative	0.062
MOG antibodies	18 positive 10 negative	9 positive 15 negative	0.054
AQP-4 antibodies	4 positive 22 negative	3 positive 17 negative	0.97
Complete Recovery	17/37	20/38	0.74

Table 1 – Outcome summary and significance

Infection Cohort

- 25/56 eyes (64%) had a severe visual impairment with VA of 1.00 LogMAR or worse
- Oligoclonal bands were only detected in 3 patients (16.7%) and were absent in 15 (83.3%)
- Myelin Oligodendrocyte Glycoprotein (MOG) antibodies were detected in 64.3% of patients tested

Vaccination Cohort

- 35.3% of patients suffered from bilateral ON

Conclusion:

To establish causation, further research is needed and in particular collection of longitudinal data is requiered to determine potential progression to MS, MOGAD or NMOSD in those affected.

References

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2. Moher D, Shamseer L, Clarke M, Ghersi D, Liberati A, Petticrew M, Shekelle P, Stewart LA. Preferred Reporting Items for Systematic Review and Meta-Analysis Protocols (PRISMA-P) 2015 statement. Syst Rev. 2015;4(1):1. PMID: 25554246