Title: Conversion of clinically isolated syndrome into multiple sclerosis and neuromyelitis optica spectrum disorders in Hong Kong – a 5-year prognosis study

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Background & Objective

Multiple sclerosis (MS) and neuromyelitis optica spectrum disorders (NMO) were both debilitating conditions of the central nervous system. With increasingly awareness, patients with clinically-isolated-syndrome (CIS) were now monitored closely for possible disease conversion. In this study, we retrospectively analyzed the conversion rate and 5-year prognosis of CIS patients in Hong Kong, with a particular focus on risk factors for conversion.

Methods

All CIS patients followed up at Pamela Youde Nethersole Eastern Hospital, a Hong Kong regional hospital, with disease duration of at least 5 years were recruited. They were analyzed based on their most updated diagnosis as of September 2017, according to the 2010 McDonald criteria and the 2015 Wingerchuk criteria. Parameters including age, gender, and nature of first CIS were collected for risk stratification. Outcome parameters including treatment, mortality, and expanded-disability-status-scale (EDSS) were also analyzed.

Results

139 CIS patients with at least 5 years disease duration were identified. After a median disease duration of 129 months, 69 converted into MS; 24 into NMOSD (seropositive=14); 2 recurrent optic neuritis; 1 revised as chronic-lymphocytic-inflammation-with-pontine-perivascular-enhancement-responsive-to-steroids (CLIPPERS); and 43 remained as CIS. The median disease conversion time was 15 months. Conversion into MS or NMOSD was more likely if the first CIS was transverse myelitis ($p<0.01$) or if the onset age was younger ($p=0.02$).

46.4% MS patients have ever received DMT, and 79.2% NMOSD patients have received long-term immunosuppression. The overall mortality rate was 10.8%, and the mean EDSS was 3.4.

Conclusion

The conversion rates of CIS into MS (50%) and NMO (17%) in Hong Kong were comparable with other localities.