Table 1 Characteristics and clinical findings of pediatric patients with optic neuritis (n=333)

 n (%)

|  |  |
| --- | --- |
| Female/Male | 201 (60.4)/132 (39.6)  |
| Age of onset (years) | 12.65±3.90 (0.55-20.47) |
| Follow up, months, mean±SD (range) | 22.16±25.43 (0.23-132)  |
| Relative afferent pupillary defectPresentAbsent | 134 (55.1)109 (44.9) |
| Painful eye movements PresentAbsent | 140 (47.3)156 (52.7) |
| Unilateral/ Bilateral presentation  | 221(66.4)/112 (33.6) |
| Optic disc swelling on examination PresentAbsent | 36 (10.8)297 (89.2) |
| Oligoclonal bands in cerebrospinal fluidPresent Absent | 90 (41.1)129 (58.9) |
| CSF/serum IgG indexElevatedNormal | 84 (43.1)111(56.9) |
| MOG IgG serumPositiveNegative | 26 (12.4)183 (87.6) |
| AQP4-IgG serumPositiveNegative | 5 (2.4)204 (97.6) |
| Visual outcome at 12 monthsFull recoveryPartial recoveryVision loss | 224 (82.7)30 (11.1)17 (6.3%) |
| Recurrence PresentAbsent | 46 (17)225 (83) |

Table 2. Distribution of optic neuritis according to etiology

|  |  |  |  |
| --- | --- | --- | --- |
| **Etiological group** | **Prepubertal****n=85** | **Postpubertal****n=248** | **P value** |
| Isolated | 46 (% 54.1)  | 138 (%55.6) | <0.001 |
| Optic neuritis with MS NMOSD MOGAD ADEM CRION | 5 | 79\* |
| 5 | 5 |
| 11\* | 12 |
| 13\* | 2 |
| 0 | 5 |
| Others | 5 | 7 |

*p:Chi-square test*

\* Patients who were diagnosed as ON in postpubertal period more likely had MS concomitantly while in prepubertal period patients more likely had MOGAD and ADEM concomitantly.

Table 3. Characteristics of prepubertal and postpubertal patients

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Prepubertal n=85,%** | **Postpubertal** **n:=248,%** | **P value** |
| **Female** | 43 (50.6) | 158(63.7) | **0.033a** |
| **Age of onset** | 7.11±2.15(0.55-9.89) | 14.55±2.16(2.04-20.47) | **<0.005c** |
| **Antecedent infection**  | 19(41.3) | 33(27.3) | 0.080a |
| **Follow up period,months** | 29.14±27.52(1-108) | 19.79±24.28(0.23-132) | **0.003d** |
| **Symptoms and Signs**BilateralOcular pain Optic disc swellingAfferent pupillary defect | 45 (52.9)34 (46.6)14 (16.5)34 (63) | 67 (27)106 (47.5)22 (8.9)100 (52.9) | **<0.001a**0.887a0.052a0.190a |
| Visual evoked potentialNormalAbnormal | 4 (6.9)54 (93.1) | 10 (5.1)185 (94.6) | 0.605b |
| **Laboratory**CSF protein HighNormalCSF pleocytosis Positive Negative Serum AQP4 IgG PositiveNegativeSerum MOG IgGPositive NegativeCSF/serum IgG index High NormalCSF Oligoclonal bandsPositive Negative | 8 (13.6)51(86.4)7 (13)47 (87)2 (4.3)44 (95.7)12 (25)36 (75)13 (29.5)31(70.5)11(22)39 (78) | 34 (18.5)150 (81.5)12 (6.9)162 (93.1)3 (1.8)160 (98.2)14 (8.7)147 (91.3)71(47)80 (53)79 (46.7)90 (53.3) | 0.385a0.159a0.326b**0.003a****0.039a****0.002a** |
| Orbital MRILesion +Normal | 51 (69.9)22 (30.1) | 138 (62.2)84 (37.8) | 0.234a |
| Cranial MRI Lesion +Normal | 32 (41)46 (59) | 110 (46)129 (54) | 0.441a |
| Spinal MRI Lesion +Normal | 14 (21.5)51(78.5) | 52 (26.3)146 (73.7) | 0.446a |

*a:Chi-squared test, b:Fisher Exact test, c:Student t test, d:Mann Whitney U test*

Table 4 Comparison of Unilateral and Bilateral Optic Neuritis

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Unilateral(n,%)** | **Bilateral(n,%)** | **Pvalue** |
| Age(years) | 13.28 3.5(0.55-19.43) | 11.41+4.35(0.68-20.47) | **<0.001a** |
| Color vision at 6 months Complete lossPartial lossNormal | 1 (2.2)14 (31.1)30 (66.7)\* | 3 (12.5)15 (62.5)\*6 (25) | **0.003b** |
| Color vision at 12 monthsComplete lossPartial lossNormal | 1 (2.7)6 (16.2)30 (81.1)\* | 2 (11.8)8 (47.1)\*7 (41.2) | **0.013b** |
| CSF pleocytosis present absent | 8 (5.5)138 (94.5) | 11(13.4)71(86.6) | **0.037b** |
| CSF Oligoclonal bands positivenegative | 69 (47.6)76 (52.4) | 21 (28.4)53 (71.6) | **0.006b** |
| Serum MOG IgG positive negative | 11(7.9)128 (92.1) | 15 (21.4)55 (78.6) | **0.005b** |

*a: Student t test, b:Chi-squared test*

\*The prognosis of color vision recovery in 12th month were better in the unilateral ON patients than bilateral ON patients.

Table 5. Comparative results of isolated and MS-associated optic neuritis

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Isolated optic neuritis n=184,%** | **Optic neuritis with MS n=84,%** | **P value** |
| Sex (female) | 104 (56.5) | 64 (76.2) | **0.002a** |
| Age(years) | 12.43+3.76 (0.55-17.97) | 14.84+2.66 (6.18-20.47) | **0.00c** |
| Visual acuity 12.months AbnormalNormal | 14 (33.3)28 (66.7) | 3 (1.1)24 (88.9) | **0.047a** |
| Spinal MRI Lesion+Normal | 8 (6.2)121(93.8) | 40 (54.1)34 (45.9) | **<0.001a** |
| Cranial MRI Lesion+ Normal | 36 (21.1)135 (78.9) | 79 (94)5 (6) | **<0.001b** |
| Cranial MRI+orbital MRI Lesion+Normal | 18 (11.3)141(88.7) | 42(60)28(40) | **<0.001a** |
| CSF/serum IgG index High Normal | 26 (27.1)70 (72.9) | 52 (78.8)14 (21.2) | **<0.001a** |
| CSF oligoclonal bands PositiveNegative | 28 (26.4)78 (73.6) | 55 (74.3)19 (25.7) | **<0.001a** |
| Mycoplasma serology Positive Negative | 9 (8.7)95 (91.3) | 056 (100) | **0.028b** |

*a:Chi-squared test, b:Fisher Exact test, c:Student t*