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 defect  Present  Absent | 134 (55.1)  109 (44.9) |
| Painful eye movements  Present  Absent | 140 (47.3)  156 (52.7) |
| Unilateral/ Bilateral presentation | 221(66.4)/112 (33.6) |
| Optic disc swelling on examination  Present  Absent | 36 (10.8)  297 (89.2) |
| Oligoclonal bands in cerebrospinal fluid  Present  Absent | 90 (41.1)  129 (58.9) |
| CSF/serum IgG index  Elevated  Normal | 84 (43.1)  111(56.9) |
| MOG IgG serum  Positive  Negative | 26 (12.4)  183 (87.6) |
| AQP4-IgG serum  Positive  Negative | 5 (2.4)  204 (97.6) |
| Visual outcome at 12 months  Full recovery  Partial recovery  Vision loss | 224 (82.7)  30 (11.1)  17 (6.3%) |
| Recurrence  Present  Absent | 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**  Bilateral  Ocular pain  Optic disc swelling  Afferent 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**  0.887a  0.052a  0.190a |
| Visual evoked potential  Normal  Abnormal | 4 (6.9)  54 (93.1) | 10 (5.1)  185 (94.6) | 0.605b |
| **Laboratory**  CSF protein High  Normal  CSF pleocytosis  Positive  Negative  Serum AQP4 IgG  Positive  Negative  Serum MOG IgG  Positive  Negative  CSF/serum IgG index High  Normal  CSF Oligoclonal bands  Positive  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) | 0.385a  0.159a  0.326b  **0.003a**  **0.039a**  **0.002a** |
| Orbital MRI  Lesion +  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 loss  Partial loss  Normal | 1 (2.2)  14 (31.1)  30 (66.7)\* | 3 (12.5)  15 (62.5)\*  6 (25) | **0.003b** |
| Color vision at 12 months  Complete loss  Partial loss  Normal | 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  positive  negative | 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  Abnormal  Normal | 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  Positive  Negative | 28 (26.4)  78 (73.6) | 55 (74.3)  19 (25.7) | **<0.001a** |
| Mycoplasma serology Positive  Negative | 9 (8.7)  95 (91.3) | 0  56 (100) | **0.028b** |

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