A Novel Feature Disclosed in Opticospinal Multiple Sclerosis in Asians

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Increased evidence suggests that opticospinal multiple sclerosis (OS-MS) preferentially found in Asians is a distinct disease entity which differs from the conventional or universal form of MS in many aspects. The following characteristics have been reported in OS-MS; 1) severe and selective involvement of the optic nerve and spinal cord, 2) paucity of brain MRI lesions, 3) frequent occurrence of spinal cord atrophy on MRI, 4) marked pleocytosis in the cerebrospinal fluid (more than 50 cells/μl), 5) a strong association with HLA-DPB1*0501 allele, but not with HLA-DRB1*1501 allele which is a susceptibility gene for the conventional form of MS (1, 2). Yamasaki et al in this issue of Internal Medicine added a new feature to the above-mentioned list, i.e., a frequent occurrence of hyperprolactinemia (3).

They found a significant increase in the serum prolactin level in female patients with Asian type MS (OS-MS) as compared with healthy controls at the time of acute optic nerve involvement. The serum prolactin level has been reported to be normal in Caucasian patients with MS (conventional form of MS) (4, 5).

It is interesting to note that similar hyperprolactinemia was reported in black women having recurrent optic myelitis (6). Although MS is also rare in black people, their MS frequently show opticospinal form (recurrent optic myelitis). Therefore, hyperprolactinemia appears to be preferentially associated with opticospinal MS in Asians as well as in black people. Although the mechanism of hyperprolactinemia was not studied in those black patients (6), Yamasaki et al (3) clearly showed an association between hyperprolactinemia and acute optic neuritis. The previous study of the same group in Japanese patients with MS indicated hypothalamic cause for hyperprolactinemia by a loading test and brain MRI. It is thus suggested that an extension of optic nerve inflammation to the pituitary stalk disrupts the tuberoinfundibular dopaminergic pathway inhibiting prolactin secretion. To further confirm this scenario, it is necessary to study prolactin levels in pure optic neuritis as well as in male patients with OS-MS at the acute stage.

Prolactin is a potent immunomodulator, which enhances Th1 cellular responses (7). Since MS is currently considered as Th1 disease, prolactin is likely to augment MS disease activity. Blockade of prolactin activity by a dopaminergic agonist, bromocriptine, may therefore be valuable for downregulating disease activity in OS-MS, as shown in experimental allergic encephalomyelitis (8). In clinical practice, the prolactin level should be measured in cases of either amenorrhea or galactorrhea associated with OS-MS.

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References