Pentoxifylline Treatment in HTLV-I-Associated Myelopathy

Pentoxifylline (Trental®) is a methylxanthine derivative used for treating vascular diseases (1). Pentoxifylline also suppresses tumor necrosis factor- α (TNF- α) production in endotoxin-treated healthy volunteers (2). Recently, Fazely et al (3) reported that pentoxifylline decreased the replication of human immunodeficiency virus type 1 by down regulation of TNF- α .

We have demonstrated simultaneous up regulation of inflammatory cytokines, including TNF- α , interferon- γ , granulocyte-macrophage colony stimulating factor and interleukin-1 α , in peripheral blood mononuclear cells of patients with human T-lymphotropic virus type I (HTLV-I)-associated myelopathy (HAM) (4). Therefore, we treated six patients with HAM (4 women, 2 men; 34–64 years old) with pentoxifylline (Hoechst), 300 mg per os daily for four weeks, in an open, nonrandomized, uncontrolled study. Treatment with pentoxifylline resulted in improvement of gait disturbance and decreased spasticity in 5 of 6 patients with HAM (Table 1). Although patient 6 had been confined to a wheelchair before treatment, she was able to walk 5 m with assistance after treatment. As measured by their disability grade in motor function, rated from 0 to 10 according to the scale of Matsuo et al (5), patients 2, 3 and 6 showed an improvement of one to two grades. Moreover, patient 1 had mild improvement of sphincter disturbance. However, no changes were recorded in deep tendon reflexes, pathologic reflexes and sensory disturbances. There were no clinical exacerbations or adverse effects during treatment.

Interestingly, spontaneous proliferation of peripheral blood lymphocytes, which is one of the major immunological abnormalities observed in patients with HAM (6), was significantly decreased in all patients following treatment with pentoxifylline. These results suggest that the efficacy of pentoxifylline treatment may be due to its immunomodulatory function. Furthermore, our data suggest that the inflammatory cytokines, such as TNF- α , are involved in the pathogenesis of HAM.

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Table 1. Effect of Pentoxifylline Treatment in HAM Patients

Patient	Age/sex	Time required to walk 10 m (sec)		Disability grade**	
		before	after	before	after
1	42/M	6.6	6.0	2	2
2	62/F	9.5	8.2	4	3
3	64/F	11.2	7.2	4	2
4	35/M	11.4	7.1	4	4
5	34/F	13.5	8.8	4	4
6	44/F	*	*	8	6

*This patient was confined to a wheel chair before treatment. Following treatment, she was able to walk 5 m with assistance. **Disability grade in motor function was rated from 0 to 10 according to the scale of Matsuo et al (5).

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