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# ASPECTS OF FATIGUE IN POST-POLIO

av

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## AKADEMISK AVHANDLING

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## Abstract

Fatigue is a subjectively experienced and complex phenomenon and one of the most common symptoms in the post-polio syndrome (PPS) occurring in up to 90% of the patients. Experiencing fatigue, negatively impacts work performance, family life, social relationships, and the quality of life (QOL). The origin of fatigue can be central or peripheral and can be experienced in different ways, for example as general, physical, mental, or muscle fatigue.

The overall aim of the thesis was to evaluate and analyse fatigue in PPS patients. Specific aims were: to find if generally fatigued PPS patients demonstrate deficits in cognition compared with non-fatigued; to evaluate vitality and fatigue and the relative contribution of physiological and psychological parameters on the level of vitality; to characterise fatigued and non fatigued PPS patients, and to define subgroups across the fatigue continuum; and finally, to describe quality of life characteristics as measured by SF-36 in responders and non-responders after intravenous immunoglobulin treatment (IVIG).

The work encompasses three samples of PPS patients. Study I includes twenty PPS patients with and without general fatigue from the post-polio out-patient clinic at Huddinge University Hospital. Study II and III analyses baseline data from 143 PPS patient from a Swedish multicenter study and Study IV is based on follow-up data from 112 patients from the post-polio out-patient clinic at Danderyds University Hospital before and after IVIG treatment.

Cognitive performance differences could not be detected between the fatigued and non-fatigued PPS patients and systematic varying of the test order did not significantly trigger mental fatigue. Vitality in PPS patients was mostly dependent on physiological rather than psychological parameters and mental fatigue was not a prominent predictor. On the contrary to what were expected vitality increased and fatigue as well as pain decreased with increasing age. Fatigued PPS patients were characterized by significant lower age, more physical problems and lower QOL than non-fatigue PPS patients. Furthermore, in the fatigued group mental fatigue had a relatively greater importance than physical fatigue. In the total sample of PPS patients the scores for SF-36 sub domains Vitality, Bodily pain, Social function, Role emotional and MCS were significantly improved after IVIG treatment at the 6-month follow-up. Vitality and Bodily pain were identified as possible outcome variables for IVIG treatment and positive-, non- and negative responders were identified. Responders for treatment were characterised by a low vitality i.e. a high fatigue before treatment.

It is concluded that fatigue in PPS is mostly physical in its character; General fatigue does not affect cognition in PPS. Mental fatigue is not a prominent phenomenon. Fatigued PPS patients may be considered as a subgroup and there are PPS patients with both positive and negative responses to IVIG treatment. PPS patients with high levels of fatigue and pain before treatment are the ones who may benefit from the IVIG treatment.

**Keywords:** post-polio syndrome, general fatigue, physical fatigue, mental fatigue, vitality, cognition, subgroups, quality of life, IVIG, response group.