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Correlating neurofilaments and inflammatory markers with severity and prognosis of Guillain Barre Syndrome- a prospective study

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Aims: To estimate the levels of C reactive proteins (CRP), neutrophil lymphocyte ratio (NLR) and neurofilaments in Guillain Barre Syndrome (GBS). To identify a potent biomarker for prognosticating GBS.

Background : GBS is an acute inflammatory, autoimmune disease of the peripheral nervous system (PNS). It can cause acute flaccid paralysis, which may progress to respiratory distress with or without cranial nerve involvement. It is a male predominant disease, with an incidence 1-2/100,000 person. The morbidity of GBS is 5 % leading to physical disability. The mortality rate is 3.9% due to respiratory distress and dysautonomia.

Method : Eighty patients with GBS (based on the NINDS diagnostic criteria for GBS) admitted during the study period were included. Patients were followed up at 4 weeks and 12 weeks and analysed using the Hughes Disability score, Erasmus GBS Respiratory Insufficiency Score (EGRIS), Erasmus GBS Outcome Score (EGOS). A quantitative assessment of CRP, NLR and Neurofilaments (phosphorylated-pNfH, heavy-NfH and light-NfL chains) is done.

Results: We will be analysing 70 patients of GBS, quantifying their inflammatory and neurofilaments values with healthy control serum samples.

Conclusions : (after analysing 37 patients)Inflammatory markers (CRP and NLR) can be used to predict dysautonomia and respiratory distress. Cerebrospinal fluid, NfL can be used as a biomarker of GBS severity at the time of patient admission, to correlate the possibility of respiratory distress and patient prognosis at three months. The Nf analysis contribute to introducing a paradigm shift in the diagnostic workup of patients with GBS.