Is anticeramide antibody a marker for nerve damage in leprosy

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Leprosy is a chronic granulomatous disease affecting skin and nerve. There is a range of clinical and immunological responses to infection with Mycobacterium leprae and the disease manifests as a spectrum. Mycobacterium leprae, has a predilection for Schwann cells, where the organism multiplies unimpeded by organism-specific host immunity, resulting in destruction of myelin, secondary inflammatory changes, and destruction of the nerve architecture.Although leprosy may have a protracted onset and be difficult to recognize, cure is achievable with appropriate multidrug therapy. Because untreated leprosy can result in permanent, irreversible nerve damage and secondary transmission, early diagnosis and treatment are essential to minimize morbidity.Anti neural antibodies are known to play a role in the immunopathogenesis of nerve damage in leprosy. Ceramide is a glycosphingolipid that is expressed as a surface determinant of myelin, antibodies to ceramide or related neural components of the myelin sheath may be associated with nerve damage.The present study was undertaken to identify antibodies to ceramide in the sera of leprosy patients, and healthy subjects using enzyme linked immunosorbant assay (ELISA), to evaluate the possible role of anti-ceramide antibodies (ACA) as a marker in the assessment of nerve damage.This study included 25 patients with MB leprosy, 25with PB leprosy without previous treatment and 50 healthy controls. Studied individuals were subjected to history taking as: name, sex, age, residence, occupation, contact numbers and duration of the disease.Clinical examination including: type of leprosy (PB or MB), sites and morphology of skin lesions, nerve examination; tenderness and enlargement, disability; examine eyes for any problem due to leprosy, and examine hands & feet for anesthesia and visible deformity or damage.Histopathological report soft skin biopsies was used for diagnosing paucibacillary (PB) and multibacillary (MB) leprosy cases. Leprosy patients were classified broadly as PB or MB according to World Health Organization (WHO) guidelines for the treatment purposes without taking into account the size and extent of lesions or the number of nerves involved.Venous blood samples (5 ml each) were collected from both leprosy patients and healthy controls under sterile conditions. Leprosy patients on drug therapy, immunosuppressive therapy such as corticosteroids, regular analgesics and/or with a history of inflammatory, autoimmune disease or any other systemic illness were excluded from the study. Anti-ceramide antibody titre was estimated by indirect ELISA, and correlated the ACA levels with type of leprosy, duration, nerve damage

and disabilities in paucibacillary and multibacillary leprosy patients.Results were reported as mean ± SD and data was analyzed statistically by Chi square test, with the level of significance set at p