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INFECTIOUS DISEASES (BACTERIAL, FUNGAL, VIRAL, PARASITIC, INFESTATIONS)

SUMO MAY BE INVOLVED IN TGF-β1 SIGNALLING IN NEURAL LESION OF LEPROSY REVERSAL REACTION

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Background: Neural lesion in leprosy is characterized by chronic inflammation which can develop into fibrosis causing neural damage which remains to be a burden in leprosy because of its ability to cause deformity and permanent disability. Transforming growth factor β is a key growth factor in the development of tissue fibrosis. SUMOylation is a post-translational modification and as a result, regulate TGF- β response.

Objective: The aim of this study was to evaluate the in vivo expression of Schwann cell TGF- β 1, SUMO 1, and SUMO 2/3/4 in the nerve biopsy of leprosy patients.

Materials and Methods: This study comprised 50 people consisted of 28 leprosy patients with reversal reactions (RR) and 22 leprosy patients without RR as control, conducted in Dermatovenereology outpatient clinic of Donorojo Hospital, Jepara, Indonesia and Health Department of Jepara District, Indonesia from June to August 2014. The patients were 20-60 years old and have signed informed consent according to the standard from Airlangga University Ethics Committee. A punch biopsy was done in the lesion area or forearm extensor.

Results: Immunohistochemistry staining showed an increasing distribution of mononuclear cells in the perineurium area of RR patients. The distribution of TGF- β 1 was increased in the perineurium area s100b positive in RR patients. There was an increased distribution of collagen-1, SUMO-1, and SUMO 2/3/4 in the positive TGF- β 1 perineurium area in RR patients compared to those without reversal reaction.

Conclusion: The increased expression of SUMO-1 and SUMO 2/3/4 in the neuritis area of leprosy patients indicated there was a transcription process regulation mediated by TGF- β 1 signaling by SUMO-1 and or SUMO 2/3/4. SUMO may be involved in TGF- β 1 signaling in the neural lesion of leprosy reversal reaction.





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