# ABSTRAK

## Peran Suplementasi Vitamin $D_3$ 5000 IU Terhadap Derajat Keparahan Reaksi Eritema Nodosum Leprosum (Tinjauan Terhadap Kadar Transforming Growth Factor-β dan Skor Skala Keparahan ENL ENLIST)

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**Latar Belakang :** Eritema Nodosum Leprosum (ENL) merupakan reaksi MH yang kompleks dan rumit karena keterlibatan sistemik dan kekambuhannya yang lebih sering, serta insidensi yang terbanyak dibandingkan reaksi MH lainnya. *Transforming Growth Factor* (TGF) - β adalah salah satu sitokin proinflamasi yang mengalami peningkatan pada reaksi ENL dan paling menarik karena mempunyai fungsi ganda sebagai imunoregulator dan imunosupresor. Derajat keparahan reaksi ENL juga dapat dinilai dari kondisi klinis pasien dengan skala keparahan *Erythema Nodosum Leprosum International Study* (ENLIST). Pengobatan utama ENL dengan kortikosteroid dapat menyebabkan komplikasi berat hingga berujung kematian sehingga obat alternatif dengan atau tanpa kortikosteroid perlu diteliti dan dikembangkan. Peran Vitamin D pada reaksi ENL menarik untuk diteliti dengan harapan dapat menjadi pilihan terapi *adjuvant*.

**Tujuan :** Mengetahui peran suplementasi vitamin $D_3$ 5000 IU terhadap derajat keparahan reaksi ENL berdasarkan tinjauan terhadap kadar TGF-β serum dan skor skala keparahan ENL ENLIST pasien MH dengan reaksi ENL ENL.

**Metode :** Uji klinis *double blind randomized controlled trial*, *two group pre and post design*. Subyek penelitian pasien MH dengan reaksi ENL berjumlah total 16 orang, dibagi menjadi 8 orang kelompok perlakuan dan 8 orang kelompok kontrol. Kelompok perlakuan mendapat tablet kortikosteroid dan vitamin $D_3$ 5000 IU dan kelompok kontrol mendapatkan tablet kortikosteroid dan plasebo yang dikonsumsi masing-masing selama 30 hari. Semua subyek penelitian sebelum dan sesudah perlakuan dilakukan pengambilan sampel darah vena kemudian diuji kadar 25(OH)$D_3$ dan TGF-β serumnya dengan metode ELISA (Bt-Lab) serta dilakukan penilaian kondisi klinis subyek penelitian dengan skala keparahan ENL ENLIST.

**Hasil :** Selisih rerata kadar TGF-β serum antara kedua kelompok subyek penelitian sebelum dan sesudah penelitian penurunannya tidak terdapat perbedaan bermakna (p = 0,454; uji *Independent T*) sedangkan selisih rerata skor keparahan ENL ENLIST antara kedua kelompok subyek penelitian sebelum dan sesudah penelitian menurun secara bermakna (p = 0,046; uji *Independent T*).

**Simpulan :** Suplementasi vitamin $D_3$ 5000 IU berperan terhadap derajat keparahan ENL bila ditinjau berdasarkan penurunan skor skala keparahan ENL ENLIST tapi tidak berperan terhadap penurunan kadar TGF-β serum.

**Kata Kunci :** Eritema Nodosum Leprosum (ENL), *Transforming Growth Factor* (TGF) - β, Vitamin $D_3$, Skala Keparahan ENL ENLIST

## ABSTRACT

### The Role of Vitamin $D_3$ Supplementation at 5000 IU on the Severity of Erythema Nodosum Leprosum Reactions (A Review of Transforming Growth Factor-β Levels and ENLIST ENL Severity Scale Scores)



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**Background :** Erythema Nodosum Leprosum (ENL) is a complex and complicated MH reaction due to its more frequent systemic involvement and recurrence, as well as the highest incidence compared to other MH reactions. Transforming Growth Factor (TGF) - β is one of the proinflammatory cytokines that increases in ENL reactions and is most interesting because it has a dual function as an immunoregulator and immunosuppressor. The severity of the ENL reaction can also be assessed from the patient's clinical condition with the Erythema Nodosum Leprosum International Study (ENLIST) severity scale. The main treatment of ENL with corticosteroids can cause severe complications to death so that alternative drugs with or without corticosteroids need to be studied and developed. The role of Vitamin D in ENL reactions is interesting to study with the hope that it can be an adjuvant therapy option.

**Objective :** To determine the role of vitamin $D_3$ supplementation 5000 IU on the severity of ENL reactions based on a review of serum TGF-β levels and ENL severity scale scores ENLIST in MH patients with ENL reactions.

**Method :** Clinical trials *double blind randomized controlled trial*, *two group pre and post design*. The subjects of the study were MH patients with ENL reactions with the total of 16 people, divided into 8 people in the treatment group and 8 people in the control group. The treatment group received corticosteroids and vitamin $D_3$ 5000 IU tablets and the control group received corticosteroid and placebo tablets which were consumed for 30 days each. All research subjects before and after treatment had venous blood samples taken and then their serum 25(OH)$D_3$ and TGF-β levels were tested using the ELISA method (Bt-Lab) and the clinical condition of the research subjects was assessed using the ENLIST ENL severity scale.

**Results :** The difference in the mean serum TGF-β levels between the two groups of research subjects before and after the study showed no significant difference ($p = 0.454$; Independent T test), while the difference in the mean ENLIST ENL severity scores between the two groups of research subjects before and after the study decreased significantly ($p = 0.046$; Independent T test).

**Conclusion :** Supplementation of vitamin $D_3$ 5000 IU plays a role in the severity of ENL when viewed based on the decrease in the ENLIST ENL severity scale scores but does not play a role in decreasing serum TGF-β levels.



**Keywords :** Erythema Nodosum Leprosum (ENL), *Transforming Growth Factor* (TGF) - β, Vitamin $D_3$, ENLIST ENL Severity Scale