

## The effectiveness of treatment with enoxaparin in lichen planus

### *Liken planusda enoxaparin tedavisinin etkinliđi*

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#### ABSTRACT

**Objectives:** As it is known, the low doses of Heparin's analogues have the antiproliferative and immunomodulator activities. This research aims to evaluate the activity of enoxaparin by using the low doses.

**Materials and methods:** 21 patients with lichen planus diagnosis have been cured within 12 weeks. 3 mg of enoxaparin has been used for subcutaneous injection to all of patients weekly. The efficient and reliable data has been saved.

**Results:** The perfect recovery has been observed 15 (71%) of 21 patients, the distinct recovery has been observed 4 (19%) of 21 patients. The treatment has not given response on 2 (9%) of 21 patients. The best score has been received on acute generalized type of Lichen Planus.

**Conclusions:** As the result; it has been reported that enoxaparin treatment can be an effective choice in Lichen Planus medication. *J Clin Exp Invest 2011; 3(2): 172-173*

**Key words:** Lichen planus, enoxaparin, treatment

#### INTRODUCTION

Lichen Planus is a common, chronic and inflammatory mucocutaneous disease which affects 0,9-1,2 % of the general population.<sup>1</sup> The mucosal accumulations frequently occur and it can rarely cause to nail dystrophy or cicatricial alopecia. There are various clinical types of Lichen Planus and the course of disease is unpredictable.<sup>2</sup> The Lichen Planus is characterized by the interface dermatitis which is occurred intensely infiltration of lymphocytes along dermal-epidermal junction and vacuolar degeneration and destruction of keratinocytes on stratum basale.<sup>1</sup>

Apoptosis of T-lymphocytes and keratinocytes which are contained in dermal infiltrate cause the destruction of epidermis. The clinical and histological indicators are similar as chronic graft-versus host reaction.<sup>3</sup> Lichen Planus may consist the response

#### ÖZET

**Amaç:** Heparin analoglarının düşük dozlarının antiproliferatif ve immünmodülatör etkilerinin olduğu bilinmektedir. Bu çalışmanın amacı; liken planusta düşük doz enoxaparinin etkinliğini değerlendirmektir.

**Gereç ve yöntem:** Liken planus tanısı alan 21 hasta 12 hafta boyunca tedavi edildi. Hastalara her hafta 3 mg enoxaparin subkutan enjeksiyonla yapıldı. Etki ve güvenlik verileri kaydedildi.

**Bulgular:** Tam iyileşme hastaların 15'inde (%71), belirgin düzelme 4'ünde (%19) tespit edildi. Hastaların 2'sinde (%9) tedaviye yanıt alınmadı. Tedavi sonucunda en iyi yanıt, liken planusun akut generalize tipinde görüldü.

**Sonuç:** Sonuç olarak enoxaparin tedavisinin liken planusta etkili bir tedavi seçeneđi olabileceđi kanaatine varıldı.

**Anahtar kelimeler:** Liken planus, enoxaparin, tedavi

of antigenic impluse in epidermis as the delayed-type hypersensitivity (DTH) reactions.<sup>1,4</sup>

Except the anti-coagulan activity of very low doses of heparin; it is point out that it inhibits type-IV reaction in T-lymphocytes sourced otoimmun diseases and on the allografted mice.<sup>2</sup> Also sulphated glycosaminoglycan heparin has anti-proliferative effects via activity interaction with keratinocyte generated, heparin-binding autocrine growth factors.<sup>1</sup>

Enoxaparin is low-molecular-weight heparin. The dominances of enoxaparin are longer half-life, easier to dose and more reliable than heparin. On the outside of anti-coagulant activity of enoxaparin, various researches are shown that it is effective on lichen planus and allergic contact dermatitis in vivo.<sup>3,5</sup> In this research; 21 lichen planus patients is cured with enoxaparin and clinical responses are analysed.

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## MATERIALS AND METHODS

The research is experienced in 22 patients (15 female and 7 male) who are between 17-60 years old. Lichen Planus is histologically verified on all of them. The duration of this disease has been taken for 2 months to 3 years. The history of taking medicine causing the similar lesion as lichen planus was not noticed on any patient.

Their systemic or local treatment was stopped at least 8 weeks before this research started. Enoxaparin was injected subcutaneously at a concentration of 3mg per week. The patients have been evaluated every week and each time they were questioned about the itchiness and its degree, the effectiveness was divided into the stages by clinical evaluation. Haemogram, blood biochemical constituents, coagulation factors were evaluated once a week before and also during treatment. The patients who took the 12 weeks medication and had been checked up during 6 months after treatment were analyzed.

## RESULTS

The research was completed on 21 of 22 patients successfully. However, The perfect recovery was observed 15 (71%) of 21 patients, the distinct recovery was observed 4 (19%) of 21 patients. The treatment did not respond on 2 (9%) of 21 patients. Also the patients did not react on any side effect. Six months after the treatment; recurrence is noticed on two patients. The best response was received on the acute generalized type lichen planus lesions. After the 2<sup>nd</sup> -3<sup>rd</sup> injection, pruritus was reduced and the 5<sup>th</sup> -6<sup>th</sup> one, it was receded completely.

## DISCUSSION

The active T-lymphocytes secrete enzyme heparanase to pass vascular barriers, to penetrate extracellular matrix and to accumulate in target tissue.<sup>1,3</sup> The chemical properties of heparin is similar like heparan sulphate which is a component of dermal-extracellular-matrix. heparan sulphate may cause competitive inhibition by occupying the part of substance that enzyme heparanase conjugates.<sup>1,2,6</sup>

In the present study we investigated the effects in vitro and in vivo of the heparanase inhibitor, heparin, on the expression of T lymphocyte heparanase and on the ability of T lymphocytes to mediate a delayed-type hypersensitivity (DTH) reaction.<sup>6</sup> The low-molecular-weight heparin reduces translocation of tumor necrosis factor alpha (TNF- $\alpha$ ), interleukin (IL)-8, IL-6, IL-1B and nuclear factor (NF) kappa B ( $\kappa$ B) which are caused by lipopolysaccharides distinctly.<sup>7</sup> Enoxaparin is low-molecular-weight

heparin. Epidemically it is used at treatment of thromboembolic diseases as similar like other low-molecular-weight heparin; it has the better pharmacodynamic parameters (properties) and more reliable than heparin. They effect by inhibiting factor Xa.<sup>8</sup> The researches about enoxaparin on Lichen Planus provide the different results. Ferahbas et al. treated 10 patients and enoxaparin was injected SC for 5mg/week. They observed that enoxaparin is non-effective except reducing pruritus.<sup>2</sup> At the other hand, studies have shown that on the treatment of lichen planus patients, enoxaparin treatment is a basic and effective method.<sup>1,3,9</sup> Yaşar et al. reported two patient with palmoplantar lichen planus, which were successfully treated by subcutaneous enoxaparin without any subsequent adverse effects.<sup>10</sup>

The self-limited course of lichen planus probably may be difficult to evaluate the efficiency of treatment. In case, spontaneous resolution is generally slow.<sup>3</sup> The quick recovery and continuous remission advocate that enoxaparin might be useful for cutaneous lichen planus. As the result, this research advocates other researches remarking that the treatment of enoxaparin is an effective treatment choice for lichen planus.

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