

## ABSTRAK

### **PENGARUH PEMBERIAN EKSTRAK *SUNFLOWER SEED OIL* (SSO) 100% TOPIKAL TERHADAP *TRANS EPIDERMAL WATER LOSS* (TEWL) DAN KADAR PH KULIT PADA PENDERITA RIWAYAT DERMATITIS ATOPIK**

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**Latar belakang:** Kulit kering dan kerusakan sawar kulit merupakan masalah utama yang ditemukan pada penderita dermatitis atopik, sehingga penggunaan pelembab dianggap memainkan peranan penting dalam penatalaksanaan penyakit ini. Pelembab yang mengandung ekstrak *sunflower seed oil* memiliki efek emolien, dapat membentuk lapisan oklusif, meningkatkan hidrasi stratum korneum, mengurangi inflamasi, serta mencegah invasi mikroba, sehingga dapat membantu memperbaiki kondisi sawar kulit yang ditandai dengan penurunan TEWL dan pH kulit.

**Tujuan:** Membuktikan efektivitas pemberian ekstrak *sunflower seed oil* 100% topikal dalam mengurangi TEWL dan pH kulit pada penderita riwayat dermatitis atopik.

**Metode:** Uji klinis *randomized clinical trial single blind* dengan rancangan *two paralel group pre and post design* yang melibatkan 34 penderita DA. Subjek dialokasikan secara acak ke dalam kelompok perlakuan dan kontrol yang masing-masing mendapat ekstrak SSO 100% (17 subjek) dan petrolatum 100% (17 subjek) secara topikal sebanyak 2 kali sehari di bagian volar lengan bawah selama 4 minggu.

**Hasil:** Diperoleh rerata penurunan TEWL yang bermakna setelah 4 minggu, baik pada kelompok pelembab ekstrak SSO ( $-5,8 \pm 1,93$  g/m<sup>2</sup>/jam;  $p=0,01$ ) maupun petrolatum ( $-6,1 \pm 9,08$  g/m<sup>2</sup>/jam;  $p=0,04$ ), tanpa adanya perbedaan yang bermakna antara kedua kelompok penelitian ( $p=0,9$ ). Rerata pH kulit hanya menunjukkan penurunan yang bermakna pada kelompok pelembab ekstrak SSO ( $-0,4 \pm 0,10$ ;  $p < 0,001$ ) dan tidak pada kelompok petrolatum ( $-0,2 \pm 0,75$ ;  $p=0,2$ ), meskipun tidak ditemukan perbedaan yang bermakna antara kedua kelompok penelitian ( $p=0,2$ ).

**Kesimpulan:** Pelembab ekstrak SSO 100% topikal sama efektifnya dengan petrolatum 100% dalam menurunkan TEWL maupun pH kulit.

**Kata kunci:** *Sunflower seed oil*, dermatitis atopik, sawar kulit, TEWL, pH

## ABSTRACT

### THE EFFECT OF TOPICAL 100% SUNFLOWER SEED OIL (SSO) EXTRACT ON TRANS EPIDERMAL WATER LOSS (TEWL) AND SKIN PH IN PATIENTS WITH HISTORY OF ATOPIC DERMATITIS

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**Background:** Dry skin and skin barrier damage are the main concerns in patients with atopic dermatitis, thus the use of moisturizer plays an important role in their management. Moisturizer with sunflower seed oil extract can work as an emollient, form an occlusive layer, increase hydration of the stratum corneum, reduce inflammation, and prevent microbial invasion, thus may help improve the skin barrier which is characterized by a decrease in TEWL and skin pH.

**Purpose:** To evaluate the efficacy of topical 100% sunflower seed oil extract on reducing TEWL and skin pH in patients with history of atopic dermatitis.

**Method:** Single blind randomized clinical trial with two parallel group pre and post design involving 34 patients with AD. Subjects were randomly allocated into the treatment and control group, receiving topical 100% SSO extract (17 subjects) and 100% petrolatum (17 subjects), respectively. Treatments were given twice daily on the volar aspect of the forearm for 4 weeks.

**Results:** Significant TEWL reduction were found after 4 weeks in both SSO extract ( $-5.8 \pm 1.93$  g/m<sup>2</sup>/h;  $p=0.01$ ) and petrolatum group ( $-6.1 \pm 9.08$  g/m<sup>2</sup>/h;  $p=0.04$ ), without significant difference in delta TEWL between the two groups ( $p=0.9$ ). Significant skin pH reduction was only found in SSO extract ( $-0.4 \pm 0.10$ ;  $p<0.001$ ) but not petrolatum group ( $-0.2 \pm 0.75$ ;  $p=0.2$ ), although there was no significant difference in delta pH between the two groups ( $p=0.2$ ).

**Conclusions:** Topical 100% sunflower seed oil extract is as effective as 100% petrolatum in reducing both TEWL and skin pH.

**Keyword:** Sunflower seed oil, atopic dermatitis, skin barrier, TEWL, pH