

PENGARUH APLIKASI KRIM EKSTRAK BAWANG DAYAK *ELEUTHERINE PALMIFOLIA*) TERHADAP KETEBALAN SOLAR ELASTOSIS : Studi Eksperimental Terhadap Tikus Wistar Jantan Yang Diinduksi Paparan Sinar UVB

ABSTRAK

Latar Belakang: Solar elastosis merupakan kondisi histopatologis yang ditandai oleh akumulasi serabut elastin abnormal pada lapisan dermis akibat paparan sinar ultraviolet B (UVB) jangka panjang. Kondisi ini menjadi penanda utama photoaging, yaitu penuaan dini pada kulit akibat faktor lingkungan, terutama sinar matahari. Iklim tropis di Indonesia yang memiliki intensitas UVB tinggi sepanjang tahun meningkatkan risiko terjadinya photoaging. Bawang dayak (*Eleutherine palmifolia*) merupakan tanaman tradisional yang dikenal memiliki sifat antioksidan dan antiinflamasi. **Tujuan:** Mengetahui efek protektif krim topikal ekstrak bawang dayak dalam menurunkan ketebalan solar elastosis pada tikus Wistar jantan yang dipaparkan sinar UVB. **Metode:** Penelitian ini merupakan penelitian true experimental dengan desain studi post-test only control group design pada tikus wistar. Tiga puluh enam ekor tikus Wistar jantan dibagi secara acak menjadi empat kelompok: kontrol (krim plasebo) dan tiga kelompok perlakuan dengan krim ekstrak bawang dayak konsentrasi 10%, 15%, dan 20%. Tikus dipaparkan sinar UVB selama satu jam setiap dua hari selama 30 hari. Krim dioleskan sebelum dan sesudah paparan. Ketebalan solar elastosis dianalisis secara histologis menggunakan pewarnaan hematoxilin eosin dan diukur dengan perangkat lunak ImageJ. **Hasil:** Uji ANOVA menunjukkan penurunan ketebalan solar elastosis yang bermakna ($p < 0,05$) pada seluruh kelompok perlakuan dibanding kontrol. Kelompok 20% menunjukkan penurunan tertinggi. **Kesimpulan:** Krim ekstrak bawang dayak secara signifikan menurunkan ketebalan solar elastosis akibat paparan UVB. Konsentrasi 20% menunjukkan hasil paling optimal.

Kata Kunci: Solar Elastosis, Photoaging, *Eleutherine palmifolia*, Antioksidan, UVB

THE EFFECT OF DAYAK ONION (*ELEUTHERINE PALMIFOLIA*) EXTRACT CREAM APPLICATION ON SOLAR ELASTOSIS THICKNESS: AN EXPERIMENTAL STUDY ON UVB-INDUCED MALE WISTAR RATS

ABSTRACT

Background: Solar elastosis is a histopathological condition marked by the accumulation of abnormal elastin fibers in the dermis, primarily due to prolonged ultraviolet B (UVB) exposure. It is a hallmark of photoaging, premature skin aging induced by environmental factors, especially sun exposure. Indonesia's tropical climate, with year-round UVB intensity, increases this risk. Dayak onion (*Eleutherine palmifolia*) is a traditional plant known for its antioxidant and anti-inflammatory properties. **Objective:** To investigate the protective effect of its topical extract cream in reducing solar elastosis thickness in UVB-exposed male Wistar rats. **Methods:** This true experimental study used a post-test-only control group design. Thirty-six male Wistar rats were randomly divided into four groups: control (placebo cream) and three treatment groups receiving Dayak onion extract cream at 10%, 15%, and 20% concentrations. All rats were exposed to UVB light for one hour every two days over 30 days. The cream was applied before and after each exposure. Skin samples were analyzed histologically using hematoxylin eosin (HE) staining, and solar elastosis thickness was measured using Cellsens software. **Results:** One-way ANOVA ($p < 0.05$) showed significant reductions in solar elastosis thickness in all treatment groups compared to the control. The 20% group showed the greatest reduction, followed by 15% and 10%, with no significant difference between the 15% and 20% groups. **Conclusions:** Topical application of Dayak onion extract cream significantly reduced solar elastosis thickness induced by UVB exposure. The 20% concentration demonstrated the most favorable outcome, supporting its potential as a natural antiphotaging therapy warranting further clinical investigation.

Keywords: Antioxidants, *Eleutherine palmifolia*, Photoaging, Solar Elastosis, Ultraviolet Rays