

<b>Thesis Title</b>	The Effectiveness of 2% <i>Andrographis Paniculata</i> Extract Cream for Periorbital Wrinkle Reduction and Periorbital Hyperpigmentation Reduction
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### **ABSTRACT**

Background: The appearance of youth and vitality is highly valued in modern society, influencing social interactions and self-esteem. Facial wrinkles, particularly in the periorbital region, are one of the most noticeable signs of aging, driven by cumulative changes in skin structure and physiology. The aging process, accelerated by oxidative stress and sun exposure, leads to the degradation of skin components such as collagen and elastin. Herbal extracts, rich in antioxidants, have emerged as promising solutions for combating the visible effects of aging. *Andrographis paniculata*, a medicinal herb with potent antioxidant and anti-inflammatory properties, has been traditionally used for a variety of health conditions. Its active compound, andrographolide, has shown potential in preventing oxidative damage and reducing the effects of skin aging.

Objective: To study the effect of 2% *Andrographis paniculata* extract on improving wrinkles and periorbital hyperpigmentation.

Study Design: This study employed a double-blinded, randomized, controlled, and split-face clinical trial to assess the efficacy of *Andrographis paniculata* (AP) extract on periorbital wrinkles over a 12-week period. The study enrolled 19 healthy male and female volunteers aged between 25 and 50 years, all of whom expressed a desire for treatment of their periorbital wrinkles. Prior to participation, all volunteers provided informed consent, and they were instructed to follow the study's protocols consistently for the duration of the trial. Skin evaluations were performed at four

intervals: baseline, 4 weeks, 8 weeks, and 12 weeks, using the VISIA, Cutometer, and Mexameter devices to monitor changes in wrinkles, skin elasticity, and pigmentation.

**Result:** The results demonstrated a significant reduction in periorbital wrinkles and periorbital hyperpigmentation in the treatment group compared to the control group. The treatment group exhibited a notable decrease in wrinkle, as well as melanin score, indicating the extract's effectiveness in combating oxidative stress and improving hyperpigmentation. No adverse effects were reported during the study.

**Conclusion:** The study concluded that *Andrographis paniculata* extract is an effective natural solution for reducing periorbital wrinkles, improving skin elasticity, and minimizing hyperpigmentation. Its potent antioxidant properties played a key role in protecting the skin from oxidative stress and promoting the production of collagen and elastin, which are essential for maintaining skin elasticity.

**Keywords:** *Andrographis paniculata* Extract, Skin Elasticity, Hyperpigmentation, Antioxidant, Oxidative Stress, Collagen, Elastin