

# Perbandingan Efektivitas Serta Keamanan antara Krim Pelembap Niasinamid 4% dan Virgin Coconut Oil 30% untuk Pencegahan Sekunder Dermatitis Tangan Akibat Kerja pada Perawat Intensive Care Unit: Uji Klinis Acak Tersamar Ganda = Comparison of the Effectiveness and Safety between Moisturizing Cream Containing Niacinamide 4% and Virgin Coconut Oil 30% for Secondary Prevention of Occupational Hand Dermatitis in Intensive Care Unit Nurses: a Double Blind Randomized Clinical Trial

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## Abstrak

**ABSTRAK**

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**Program studi** : Dermatologi dan Venereologi

**Judul** : Perbandingan Efektivitas serta Keamanan antara Krim Pelembap Niasinamid 4% dan Virgin Coconut Oil 30% untuk Pencegahan Sekunder Dermatitis Tangan Akibat Kerja pada Perawat *Intensive Care Unit* : Uji Klinis Acak Tersamar Ganda

**Latar belakang**: Dermatitis tangan akibat kerja (DTAK) sering terjadi pada perawat *Intensive Care Unit* (ICU) terutama pada individu yang rentan akibat pajanan iritan berupa *hand rub alcohol* dan aktivitas cuci tangan berulang. Penggunaan pelembap adalah salah satu rekomendasi untuk perawatan kulit pada DTAK. Niasinamid memiliki efek antiinflamasi dan dapat memperbaiki fungsi sawar kulit. Vigin coconut oil (VCO) kaya akan kandungan lipid dan asam laurat, serta memiliki efek oklusif. Sampai saat ini belum ada panduan dan referensi jenis pelembap untuk pencegahan sekunder pada DTAK.

**Tujuan**: Mengetahui perbandingan efektivitas serta keamanan antara krim pelembap niasinamid 4% dan VCO 30% untuk pencegahan sekunder dermatitis tangan akibat kerja pada perawat ICU.

**Metode**: Penelitian ini merupakan uji klinis acak tersamar ganda terhadap perawat ICU dengan DTAK pada bulan September hingga Oktober 2019. Pasien yang memenuhi kriteria penerimaan dan bersedia mengikuti penelitian, mendapat niasinamid 4% atau VCO 30% sesuai dengan randomisasi blok. Pengolesan pelembap dilakukan dua kali sehari selama 28 hari. Perbaikan klinis dinilai dengan parameter skor *Hand Eczema Scoring Index* (HECSI) dan penilaian sawar kulit dinilai dengan *transepidermal water loss* (TEWL) serta hidrasi kulit dengan *skin capacitance* (SCap) pada hari ke-14 dan hari ke-28. Keamanan dinilai berdasarkan efek samping selama penelitian.

**Hasil**: Didapatkan 46 SP pada masing-masing kelompok niasinamid 4% dan VCO 30%. Terdapat penurunan skor HECSI pada kedua kelompok perlakuan di hari ke-14 dan hari ke-28. Median skor HECSI di kelompok niasinamid 4% dan VCO 30% pada hari ke-14 yaitu 6,5 dan 6 ( $p > 0,160$ ), serta pada hari ke-28 yaitu 4 dan 3 ( $p < 0,046$ ). Pada hari ke-28, perbedaan skor HECSI kedua kelompok secara statistik bermakna, namun secara klinis tidak bermakna. Terdapat penurunan nilai TEWL pada kedua kelompok perlakuan di hari ke-14 dan hari ke-28 dibandingkan *baseline*, namun pada area palmar di kelompok niasinamid 4% terdapat

sedikit peningkatan nilai TEWL pada hari ke-28. Terdapat peningkatan nilai SCap pada kedua kelompok perlakuan di hari ke-14 dan hari ke-28 dibandingkan *baseline*. Kedua pelembap dapat ditoleransi dengan baik dengan efek samping minimal.

**Kesimpulan:** Niasinamid dan VCO efektif memperbaiki klinis DTAK pada perawat ICU, walaupun tidak terdapat perbedaan bermakna antara krim pelembap niasinamid 4% dengan VCO 30% untuk pencegahan sekunder dermatitis tangan akibat kerja pada perawat ICU

**Kata kunci:** dermatitis tangan akibat kerja, efektivitas, keamanan, pelembap, niasinamid 4%, VCO 30%

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**ABSTRACT**

: Yenny Rachmawati

**Study Program** : Dermatologi dan Venereologi

**Title** : Comparison of the Effectiveness and Safety between Moisturizing Cream Containing Niacinamide 4% and Virgin Coconut Oil 30% for Secondary Prevention of Occupational Hand Dermatitis in Intensive Care Unit Nurses: a Double Blind Randomized Clinical Trial

**Background:** Occupational hand dermatitis (OHD) often occurs in intensive care unit (ICU) nurses, especially in individuals who are vulnerable due to irritant exposure e.g. hand rub alcohol and repeated hand washing activities. The use of moisturizer is one of the recommendations for skin care in OHD. Niacinamide which has anti-inflammatory effects and can improve the skin sawar function. Virgin coconut oil (VCO) is rich in lipids and lauric acid, and has an occlusive effect. Until now there are no guidelines and reference types of moisturizers for secondary prevention in OHD.

**Objective:** To assess the difference of effectiveness and safety between moisturizing cream containing niacinamide 4% and VCO 30% for secondary prevention of occupational hand dermatitis in ICU nurses

**Methods:** A double blind randomized controlled trial was performed in ICU nurses with OHD during September–October 2019. Patients who fulfilled inclusion criteria and willing to be involved in the study were allocated to niacinamide 4% or VCO 30% based on block randomization. Moisturizer were applied twice daily for 28 days. Measurement of Hand Eczema Scoring Index (HECSI) scores were conducted to evaluate the clinical improvement . Measurement of transepidermal water loss (TEWL) were conducted to evaluate the barrier skin and skin capacitance (SCap) values were conducted to evaluate skin hydration on 14<sup>th</sup> and 28<sup>th</sup> day. Safety were assessed based on side effects during research.

**Results:** There were 46 subjects in each arms of intention, the niacinamide 4% arm and in the VCO 30% arm. There were a decrease in HECSI scores in both treatment groups on 14<sup>th</sup> and 28<sup>th</sup> day. The median score of HECSI in niacinamide 4% and VCO 30% on 14<sup>th</sup> day were 6.5 and 6 (*p* 0.160), and on 28<sup>th</sup> day were 4 and 3 (*p* 0.046). On 28<sup>th</sup> day, the difference in HECSI scores of the two groups were statistically significant, but clinically not significant. There were a decrease in TEWL values in both treatment groups on 14<sup>th</sup> and 28<sup>th</sup> day compared to baseline, but there were a slight increase in TEWL values in the palmar area in the niacinamide group on 28<sup>th</sup> day. There were an increase in SCap values in both treatment groups on 14<sup>th</sup> and 28<sup>th</sup> day compared to baseline. Both moisturizers were well tolerated with minimal side effects.

**Conclusion:** Niacinamide 4% and VCO 30% were effective in improving clinical OHD in ICU nurses, although there were no significant difference between moisturizing cream containing niacinamide 4% and virgin coconut oil 30% for secondary

prevention of occupational hand dermatitis in ICU nurses.</p><p> </p><p>Keywords: occupational hand dermatitis, effectiveness, safety, moisturizer, niacinamide 4%, VCO 30%</p>