

Effectiveness of Sesame Oil for the Prevention of Pressure Ulcer in Patients with Bed Rest Undergoing Hospitalization

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Abstract

Pressure ulcers (PUs), also known as bedsores or decubitus ulcers, are a significant concern in patients confined to bed rest during hospitalization. The prevention of pressure ulcers is critical as they can lead to extended hospitalization, infection, and increased healthcare costs. This study aims to evaluate the effectiveness of sesame oil as an intervention to prevent the formation of pressure ulcers in hospitalized patients with prolonged bed rest. The research examines the impact of sesame oil's antioxidant and anti-inflammatory properties on the skin integrity of these patients. The findings suggest that sesame oil application significantly reduces the incidence of pressure ulcers when compared to standard care practices.

Introduction

Pressure ulcers are localized injuries to the skin and underlying tissues, typically over bony prominences, due to pressure, shear, or friction. These wounds commonly occur in patients who are bedridden or have limited mobility, making hospitalized patients particularly vulnerable. The prevalence of pressure ulcers in hospitalized patients varies, but it remains a significant public health concern. The complications associated with pressure ulcers include infections, sepsis, and delayed recovery, which can prolong hospitalization and increase treatment costs. Traditional interventions for the prevention of pressure ulcers include repositioning patients frequently, maintaining skin hygiene, and using specialized mattresses or cushions. However, these methods may not always suffice in preventing the formation of pressure ulcers, leading researchers to explore adjunct therapies.

One promising natural remedy for the prevention of pressure ulcers is sesame oil, which has demonstrated various beneficial properties, including its antioxidant, anti-inflammatory, and moisturizing effects. Sesame oil contains lignans, such as sesamin and sesamol, which may help in wound healing and preventing skin breakdown. This study seeks to explore the effectiveness of sesame oil as a preventive measure against pressure ulcers in patients undergoing hospitalization.

Materials and methods

Study design

This study employed a randomized controlled trial (RCT) design, conducted over a six-month period at a major hospital. The study was approved by the institutional review board (IRB), and written informed consent was obtained from all participants.

Inclusion criteria

- Patients aged 18–80 years
- Admitted to the hospital for a minimum of 72 hours
- Confined to bed rest for at least 24 hours
- No existing pressure ulcers at the time of enrollment

Exclusion criteria

- Patients with known allergies to sesame oil
- Patients with conditions affecting skin integrity (e.g., active

dermatitis, eczema)

- Pregnant women

Intervention

Patients in the experimental group (Group A) received daily application of cold-pressed sesame oil on areas of high-pressure risk (e.g., sacrum, heels, elbows, and hips). The oil was applied using a sterile cotton swab to ensure hygiene, and patients were instructed to allow the oil to absorb naturally.

The control group (Group B) received standard care, which included regular repositioning, use of pressure-relieving mattresses, and maintenance of skin hygiene as per hospital protocol.

Outcome measures: The primary outcome was the incidence of pressure ulcers, diagnosed according to the National Pressure Injury Advisory Panel (NPIAP) criteria. Secondary outcomes included changes in skin condition (e.g., redness, dryness), patient discomfort levels, and the need for additional treatments for pressure ulcers [1,2].

Statistical analysis: Data were analyzed using SPSS version 24.0. The incidence of pressure ulcers was compared between the two groups using a chi-squared test. For continuous variables, such as skin condition scores, an independent t-test was used. A p-value of <0.05 was considered statistically significant.

Results

Demographic characteristics: A total of 150 patients were enrolled in the study, with 75 in the experimental group and 75 in the control group. The average age of the participants was 55.4 years (range: 21–

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80), and the majority of participants were male (60%).

Incidence of pressure ulcers

The incidence of pressure ulcers in the experimental group (Group A) was significantly lower than in the control group (Group B). Only 5.3% of patients in Group A developed pressure ulcers during the study period, compared to 18.7% in Group B ($p < 0.01$).

Skin condition

In Group A, there was a notable improvement in skin condition, with fewer patients exhibiting signs of redness or dryness over the study period. In contrast, Group B had more patients with mild to moderate skin breakdown, which required additional interventions. Patients in Group A reported feeling more comfortable, with reduced itching and dryness compared to those in the control group. While the use of sesame oil did not completely eliminate the need for repositioning, it appeared to enhance the overall skin condition, making the patients feel more comfortable and less at risk for developing ulcers. Fewer patients in Group A required additional treatments, such as dressings or topical antibiotics, for pressure ulcers compared to the control group.

Discussion

The results of this study indicate that sesame oil may be an effective preventive measure for pressure ulcers in hospitalized patients with prolonged bed rest. The antioxidant and anti-inflammatory properties of sesame oil likely play a role in promoting skin health and preventing tissue damage. Previous studies have highlighted the benefits of sesame oil for wound healing, and our findings suggest that its application could reduce the risk of pressure ulcer formation. The lower incidence of pressure ulcers in the sesame oil group may also be attributed to the moisturizing effects of the oil, which help maintain skin integrity.

Additionally, sesame oil's antioxidant properties may combat oxidative stress, which is known to contribute to tissue injury in bedridden patients. While this study demonstrates promising results, further research is necessary to confirm these findings. Larger trials with a more diverse patient population and long-term follow-up would provide more robust evidence regarding the efficacy of sesame oil in preventing pressure ulcers [3-5].

Conclusion

This study provides evidence that sesame oil can be an effective adjunctive therapy for preventing pressure ulcers in hospitalized patients who are at risk due to prolonged bed rest. Sesame oil's antioxidant and anti-inflammatory properties offer a promising option to enhance skin integrity and reduce the occurrence of pressure ulcers. Given the ease of application and the low cost of sesame oil, it could be a valuable addition to standard care practices for pressure ulcer prevention in hospital settings.

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