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Preliminary Study of Application of a Drug Derived from Commiphora GileadensisI (BISHAM) in Treatment of Wounds and Burns

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Abstract: Bisham (Commiphora gileadensis) is a member of the family Burseraceae. The bark of these trees is known Balsam, mostly for producing fragrant resins of economic, medicinal, and cultural value. It grows wildly today in Yemen. The aim of this study is to investigate the treatment effects of the Commiphora gileadensis (Bisham) on healing burns and wounds based on its application in folk medicine. The preliminary studies reviewed in this work have shown that the C. gileadensis effectively treats many diseases and heals burns and wounds. It is widely used in folk medicine in Hadhramout as a treatment for burns and wounds. They require intensive study to investigate its research principles which may lead to discovering new drugs "its future work."

Key words: Bisham; folk medicine; healing burns

1. Introduction:

Commiphora gileadensis(syn.C.opobalsamum (L.) Engl) is a member of the family Burseraceae, which is grown in Hadhramout known locally as Bisham [1, 2]. The bark of the trees is known as Balsam, mostly for producing fragrant resins that have economic, medicinal, and cultural value. It is grown in tropical and sub-tropical geographical areas in the dry stony hills around the Red Sea, East Africa, and Arabian Peninsula, especially within the borders of Yemen [3]. It has many local names, such as Bisham, Basham, Balasan, and Balsam Makka[4].

The medicinal uses of Balsam can be found in the classical sources of traditional medicine. It is used for digestive disorders, respiratory and urinary system, poisoning, snake bite wounds, a painkiller, and for general diseasesBalsam was most popular for treating burns, tissue healing, and as a perfume ingredient [5]. The general chemical composition of Balsam are monoterpenes, sabinene, pinene, p-cymene, limoneneand, terpinene, limpnene; these components include antibiotics antiseptic substances, resins that act as preservatives and antioxidants, as well as many other useful compounds. [6.7]. A study conducted on rats using a verified plant extract showed a positive influence in the treatment of experimentally produced stomach ulcers [8]. Balsam bark is used to treat skin diseases such as inflammations and eczema to alleviate labor pains; as an antiseptic and anti-inflammatory agent, it is sometimes used on abrasions. It is an astringent of the mucous membranes and the mouth as a remedy for sore throats [9, 10].

C. gileadensis sap had inhibitory activity against Bacillus cereus and was capable of blocking lectins of Pseudomonas aeruginosa, according to a study published in [11]. This confirms the antiseptic properties of balsam' Sab, as stated by historical sources. Reference [12] investigated the herbal medicine traditions of various Middle Eastern civilizations. The bark exudate is used externally in Yemen and Oman to treat skin disorders such as burns, wounds and infection. [14, 15]

The purpose of this study is to look into the treatment effects of Commiphora gileadensis (Bisham) on healing burns and wounds based on its use in folk medicine.

2. Materials and methods:

In this research, the effect of Commiphora gileadensis in treating burns wounds was studied employing a descriptive-analytical approach. Interviews were conducted with people who have used this plant. The study samples were 100 persons (85 females and 15 males), their ages ranged from 20 to 50 years. We took pictures of some patients. The interviews were done in 2019 in Hadhramout governorate in Yemen.

3. Results and discussion:

Thermal, radiation, chemical, or electrical exposure causes burns to the skin or other tissues. Infection, scarring, and contracture are the most unpleasant effects of burns. Bisham has many uses, such as its use in the treatment of wounds, burns, itchy skin, the treatment of ulcers, and as hair perfume soft, as makeup powder, and syrup, and its fruit are eaten.

Our study shows that the use of Bisham (Commiphora gileadensis) in the treatment of burns and wounds causes pronounced improvement in wound healing. About 90% of the samples stated that it has a strong effect in treating wounds resulting from burns. This finding agrees with what was mentioned in [12,13], which reported that it has a great effect on skin infections and wounds and traumatic injuries. The present study revealed that about 20% of patients applied Bisham without using any antibiotics. In another way, 3% of the respondents reported its use in treating stomach ulcers; this result agrees with the finding of [11], which studied the effect of verified plant extract on rats, and its findings indicated that it had a positive impact on the treatment of stomach ulcers created in the lab.

The following figures (1-4) demonstrate the dramatic response and improvement after using Bisham. Leaves are collected in the rainy season by women. The leaves are crushed and placed on the hair as fragrant and for moisturizing hair.

(a)

(b)

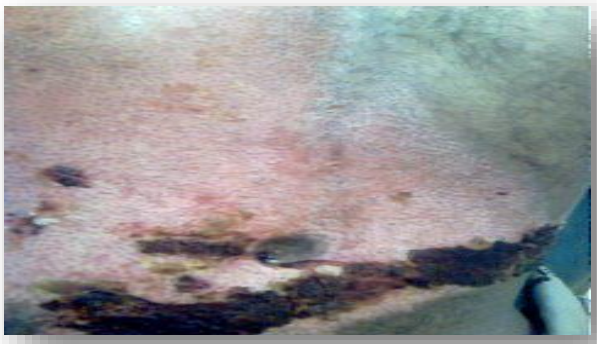
Figure 1. Second degree burns (a) before and (b) after using Bisham.

(a)

(b)

Figure 2. Wound healed burns (a) before and (b) after using Bisham.

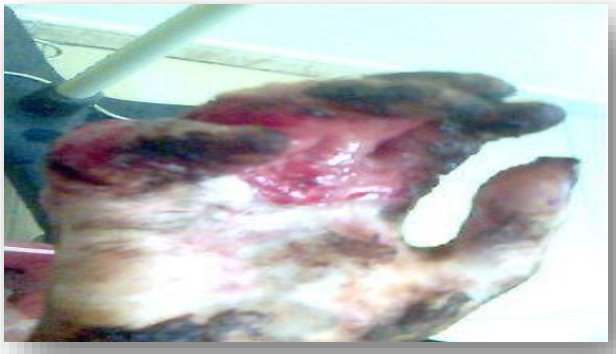
(a)



(b)

Figure 3. a. Before and b. after applying Bisham

(a)



(b)

Figure 4. Using Bisham in third degree burn.
a. before, b. after

4. **Conclusion**:

In traditional folk medicine, there are numerous applications of Commiphora gileadensis of some medicinal and aromatic plants. The current preliminary study has shown that C. gileadensis is an effective treatment of wound infections. Intensive studies are urgently required to investigate this folk medicine as it may lead to the discovery of an effective future drug.

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دراسة أولية تطبيقية للتأثير الدوائي لنبات البشام (Bisham) commiphora giledensis في علاج الجروح والحروق

بلقيس بن بريك، سالم محمد بن سلمان، سالي سالم عبد الله

الملخص: نبات commiphora giledensis ينتمي الى العائلة البخورية Bureseraceue والذي يعرف محلياً بأشجار البشام ويتم استخدامه اقتصادياً، وطبياً، وحالياً يزرع بشكل واسع في اليمن. هدف هذه الدراسة هي معرفة الآثر الطبي والعلاجي لنبات (commiphora giledensis c. البشام في معالجة الجروح والحروق والذي يستخدم بشكل واسع شعبياً. أن المشاهدات الأولية في هذه الدراسة لوحظ تأثير واضح في علاج الجروح وأمراض الحروق ويستخدم بشكل واسع طبياً في حضرموت وكما أن هذه النتائج في هذه الدراسة توحي بأعداد المزيد من الدراسات من أجل انتاج دواء يستخدم لهذه الأمراض.

الكلمات المفتاحية: البشام، الجروح ,الحروق, العائلة البخورية.