



Effect of St. John's Wort on Wound Healing



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Abstract

St. John's Wort, is an herbaceous medical plant. St. John's Wort contains ingredients such as naphthoquinones, flavonoids, bioflavonoids and phenylpropanoids that promote wound healing process, with their antifungal, anti-inflammatory and antiviral properties. It is reported in the literature that St. John's Wort showed its effect by accelerating proliferative phase, stimulating collagen synthesis and allowing transmission of fibroblasts to the injured region.

Keywords: St. John's wort; Wound healing; Wound care

Introduction

St. John's Wort is a yellow flowered, five-leaved, perennial herbaceous plant that grows in Asia, Europe, North Africa and United States of America [1,2]. St. John's Wort, whose herbal oil extract is commonly being used as a household remedy for healing wounds, is known as *Hypericum perforatum* in Latin; whereas

names such as rose of Sharon, chase devil, tipton's weed or holy herb are commonly used in daily language [2]. St. John's Wort contains ingredients such as naphthoquinones, flavonoids, bioflavonoids and phenylpropanoids that promote wound healing process, with their antifungal, anti-inflammatory and antiviral properties [3].



Figure 1: St John's wort, *Hypericum perforatum*, photographed by M. Christenhusz, 2007.

Wound healing is a process that commences firstly with the formation of certain cellular and chemical phases required in order for the recovery of wounded tissue's structural and functional integrity (Figure 1). Wound healing process consists of hemostasis, inflammation, proliferation, maturation and remodeling stages [4]. It is reported in the literature that St. John's Wort showed its effect by accelerating proliferative phase, stimulating collagen synthesis and allowing transmission of fibroblasts to the injured region [5]. Many clinical studies proving St. John's Wort's effectiveness on wound healing exist. According to animal testing results conducted with St. John's Wort, it was observed that the herb increased collagen production in chicken's embryonic fibroblast culture, and increased epithelialization in rats wounded by burns. It was determined that the underlying reason for this effect was fibroblast proliferation and increased collagenization [6]. Another study conducted with 60 rats wounded with burns of 1st or 2nd degree revealed that olive oil added extract of St. John's Wort was effective on epithelialization of 2nd-degree burn wound; moreover it showed anti-inflammatory characteristics by decreasing inflammation and edema in 1st and 2nd-degree burns [7]. Among 35 rats that were wounded with experimental contact type burns, it was observed that the group treated with St. John's Wort showed decreased levels of edema, collagen discolorization, vein and hair root damage; along with preservation of epidermis thickness; compared to the group that received silver sulfadiazine treatment [8]. Another study comprised of oral and topical St. John's Wort treatment on 54 rats having diabetical wounds of 3 cm in size. It was observed that orally treated group demonstrated higher levels of fibroblastic activity compared to other groups, and their epithelialization levels were significantly higher as per the 7th day of wounds [9].

Investigating human experiments, it was appointed that episiotomical healing of puerperal group realizing episiotomical care by applying creams containing St. John's Wort herb extracted with 90% ethanol solution two times daily for 10 days, was better than that of the puerperal group that did not apply the mentioned treatment [5]. Another study discussed that St. John's Wort oil accelerated healing of cesarian wounds, improved scar appearances, and decreased pain and itching sensations [10]. Wound healing is an important factor for both the field of medicine and nursing care; and it plays a major role in these fields. Further, more powerful and meritable research, and increased human testing is needed for application of St. John's Wort and its extracts especially for

treatment and care of burns, decubitus ulcers, chronic wounds (such as diabetical and venous leg ulcers, etc.), episiotomy, surgical incision wounds and diaper rashes. Moreover, doctors and nurses need to know St. John's Wort's effects on wound healing and proper application of the herb, since they are the ones to act as mentors for patients and patient relatives regarding complementary medicine and that they have to be conveying accurate information. In accordance with this need, application of St. John's Wort was discussed in light of relevant literature.

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