Effect of St. John’s Wort on Wound Healing

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Abstract

St. John’s Worth, is an herbaceous medical plant. St. John’s Wort contains ingredients such as naphtobacrones, flouroglusinol, 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 Worth, 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 naphtobacrones, flouroglusinol, flavonoids, bioflavonoids and phenylpropanoids that promote wound healing process, with their antifungal, anti-inflammatory and antiviral properties [3].
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 diabetic 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 epistiotomical healing of puerperal group realizing episiotomy, 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 diabetic 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].

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