IN VIVO WOUND HEALING ACTIVITY OF POLY HERBAL FORMULATION

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ABSTRACT

The study will be aimed to evaluation of In vivo wound healing activity of poly herbal formulation. Ointment of Arka ksheer, Snuhi ksheer and combination of both will be evaluated for their wound healing activity in comparison with standard drug Soframycin ointment. The two models of wound healing have five groups (each group having six rats) the 5 groups are as follows. Group A of 6 wistar strain albino rats will be applied Ointment base twice a day. Group B of 6 wistar strain albino rats will be applied Ointment of Arka Ksheer Locally twice a day. Group C of 6 wistar strain albino rats will be applied Ointment of Snuhi Ksheer locally twice a day. Group D of 6 wistar strain albino rats will be applied ointment of mixture of Arka, Snuhi Ksheer locally twice a day. Group E of 6 wistar strain albino rats will be applied Soframycin ointment locally twice a day.

Keyword: Arka Ksheer, Snuhi ksheer, Albino Rats, Polyherbal Formulation, Ketamine Inj.

1. INTRODUCTION

“Wound is defined as the disruption of the anatomic and cellular continuity of tissue caused by chemical, physical, thermal, microbial, or immunological injury to the tissue. Wound healing processes consist of integrated cellular and biochemical cascades leading to reestablishment of structural and functional integrity of the damaged tissue. Multiple growth factors are required to initiate and promote wound healing such as transforming growth factor beta (TGF-β), platelet activation factor (PAF), epithelial growth factor (EGF), and platelet growth factors (PDGF). Various treatments such as analgesics, antibiotics, and NSAIDS are available for wound management but most of these remedies have many unpleasant side effects. India is well endowed with a rich wealth of medicinal plants and is unique and proud to have a well-documented and well-established program of medicinal plants. These plants have played a major role in the development of Indianica medica. Charaka Samitha's records suggest that there are over 340 drugs of plant origin. Herbal plants have a local value in global importance. More than three-quarters of the world's population depends on drug treatment plants. There are 2,50,000 species of plants that are high in the world. Of these 80,000 are medically important. They are very important in the hope of safety and security. They tend to stay healthy in the face of constant stress and pollution. Despite the rich heritage, little attention is given to growing them as garden plants in the country. All of these medicinal plants are useful in the traditional medicine system. WHO’s international bodies attempt to compile comprehensive information on policy, regulation, funding, education, research, practice of the use of various medicinal plants that will come under TCAM. Health practices, methods, knowledge and belief are alluded to, plants, animal and minerals. Includes herbal medicines, phytomedicines, folk medicine, siddha, ayurveda, unani and homeopathy medicine. In recent years, several studies have been conducted on herbal remedies to use their potential in wound management and these natural remedies have shown their effectiveness as an alternative to the available synthetic drugs for wound healing. Many herbs that have been reported in medicine do a powerful job of healing wounds.”

2. AIMS & OBJECTIVES

This study will be aimed to evaluate the function of in vivo wound healing of the formation of poly herbs. The Arka Ksheer oils, Snuhi Ksheer and a combination of both will be evaluated for their wound healing function in comparison to the standard ointment of Soframycin ointment. Based on the available literature we planned to develop a polyherbal mass-produced novel.
3. PLAN OF WORK
1. Literature survey from libraries at various universities and colleges in India and online.
2. A sample collection.
3. Plant fruit filling.
4. Phytochemical examination.
5. Preview lessons
6. To combine the results of the various studies.
7. Analysis and interpretation of results.
8. Conclusion and Recommendations.

3. MATERIALS AND METHODS

3.1. Materials

3.1.1. Test Sample
Ointment Base, Ointment of Arka Ksheer, Snuhi Ksheer, Arka + Snuhi Ksheer oil mixture were prepared.

3.1.2. Chemicals and Consumables
In. Ketamine, Inj. Xylazine, Picric acid, Savlon, ethanol, Halothane, Diethyl ether, 10% official solution, Glycerin, Safranin, Eosine, Acetone, Benzene, Paraffin wax, Xylene, urethane etc.

3.1.3. Equipments or Apparatus
Anesthesia Room, Polypropylene Cages, Digital Measurement Machine, Standard Glass Wear, Required Surgical Tool, Microscope, Tissue processor, Microtome etc.

3.1.4. Animals:
Strain: Albino Wistar Rats
Number: 60
Sex: both

3.2. Methods

3.2.1. Housing and feeding conditions
The temperature in the animal testing room was 22°C (+ 3°C). Although relative humidity was at least 30% and probably not more than 70% except when cleaning the room the objective should be 50-60%. The lighting should be computerized, the sequence should be 12 hours light, 12 hours dark. Feeder, standard lab food can be used with unlimited supply of drinking water.

3.2.2. Marking of Albino Wistar Rats to identify
Albino dosage is marked with Picric acid in each group such as H, B, T, HB, BT, and HT where:
- H represents the Head of the albino rat
- B represents the Back of albino rat
- T represents the Tail of the albino rat
- HB represents the Head Behind an albino rat
- BT represents the Back Tail of albino rat
- HT represents the head tail of the albino rat.

3.2.3. Excision Wound Model:
Under Ketamine Xylizine anesthesia, the animal found the operating table in its natural state. Photographed on the vertical dorsal thoracic surface 2 sq.cms behind the ears, 1cm away from the vertebral column. The full size of the catchment area was ideal for a 200 sq. Foot area. The physical characteristics of wound healing i.e., wound closure (self-loosening) and time of discharge were studied in this model. The contraction, which aids in the closing of the wounds in the first two weeks, was read by following the dotted area when downloading the paper the next day followed by 0, 7, 14, and 21 and the next every day, until the discharge was complete. Mechanisms for complete eradication of scar tissue without uncoated face. The total area was measured by returning the wound to a millimeter scale paper. The wound healing rate was calculated as the percentage closure in the wound area from the actual wound location. The mean and standard error rates are calculated. The number of total completion dates was noted.

3.2.4. Incision Wound model:
Under Ketamine Xylizine anesthesia, implantation of a 6 cm paravertebral line was performed using the thickness of the skin on each side of the vertebral column with the help of a sharp instrument as described by Ehrlich and Hunt. After complete haemostasis, the wounds closed with interruptions placed at 1cm wide, using a 4-zero silk cord and straight body needles. The wounds were then drawn with cotton straw mixed with 70% alcohol. Animals were kept in solitary confinement. Suture removal was performed on day 8 of the wound injury. Absorption capacity was determined on day 10 of human injury as
described below. The stuffed animal was protected from the surgery table. Two Allies medals were used firmly in the lines facing each other; the fork on the other hand was fastened to a metal rod firmly fastened to the surgical table. Another fork is tied with a rope, which ran against the pulley. At the other end of the rope, measuring lines of succession were mounted in ascending order. The basal weight added to the cord was 50g and the weight gradually increased. As soon as the fracture was observed, the weights were quickly removed and the whole weight noted. The force of a wound is expressed as the weight at which the wound has begun to tighten. Three such recordings were performed for a given lesion and the procedure was repeated elsewhere.

3.2.5. Group Design

The two types of wound healing have five groups (each group has six mice) of the following groups.

Group A - 6 wistar albino rats will be applied Ointment base twice a day.

Group B - 6 wistar albino rats will be applied Ointment of Arka Ksheer locally twice daily.

Group C - 6 albino wistar rats will be applied Ointment of Snuhi Ksheer locally twice a day.

Groups D-6 wistar strain albino mice will be applied mixture of Ointments of Arka and Snuhi Ksheer locally twice daily.

Group E - 6 wistar strain albino rats will be applied Soframycin ointment locally twice daily.

3.2.6. Sample Collection for Histopathological Analysis

At the end of the fourteen days of dietary intolerance, the rats received 12-hour fast but had no access to water. Contributed through the CO2 compartment. The area of the harvested wound was carefully dissected, reduced to all the fat and the combined dry fat to remove any blood. Tissues were fixed in 10% saline formally, and then transferred to a mixed ethanol series. On day 1, they are placed in 70% alcohol for 7 hours, then transferred to 90% alcohol and left overnight. On day 2, the tissues were transferred with three changes of alcohol for the same hour and diluted in xylene. Once removed, the tissue was incubated with paraffin-embedded paraffin at 58 ° C. Three changes of paraffin-embedded paraffin simultaneously were made, after which the tissue was embedded in wax and locked out. Prior to embedding it was confirmed that the implanted sections that were to be cut by the rotating microtome were directly localized to the previously wound site. These sections are called "vertical sections". Large sections of 5 μm thick were obtained from a solid block of tissue, mounted on clean album slides to prevent sections from sliding and were subsequently filled with strategies to include Haematoxylin and Eosin, after which they passed to an increasing alcohol grade, cleared xylene and added to DPX light, allowed to dry at room temperature and detect Histopathologically under a digital light microscope.

3.2.7. Statistical Analysis

All values were expressed as mean ± standard error (S.E.M) of the six animals across the groups. Statistical analysis of data was performed using one-way and two-way ANOVA analysis of variance (ANOVA) with the help of Graph pad Prism software. Dunnet's multiple comparison test. A P value <0.05 was considered statistically significant.

REFERENCES


