

Cichorium Intybus Active Against Wound Infections

A Report

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Abstract:- *Cichorium intybus* a plant traditionally used as medicine used in nourishing and treating a range of skin diseases such as dryness and warts. Objective is to elucidate the effects of ethanolic extract of *Cichorium intybus* against wound infections . The extract was tested on the samples from the wounds of burn patients from burn wards. *Cichorium intybus* was used at different concentrations of 50mg/ml and 100mg/ml, significantly advanced effects was seen in wound infections as compared with distilled water which is a control

Keywords:- Warts , Wound Healing, *Cichorium Intybus*.

I. INTRODUCTION:

Natural products are still used as source of allopathic and ayurvedic medicine, and are used in different countries. [1]. The presence of different important components in these plants demanded the world to trial the plants to find out the properties of these plants to heal wounds. Blazes, Bruises, accidental injury and wounds are increasing day by day in emergent nations, frequently having acute problems. The importance of using the herbal remedies and medicinal plants for the treatment of burns and bruises is the possibility to heal the wounds. Many herbal plants have been experimented for treatment of dermal ailments, as well as wounds , traditionally used herbal medicine [2]. Scientists now a days starts experimenting plants and searching for bio activity of compounds in them, particularly used for human diseases [3]. *Cichorium intybus* (commonly known as Chicory, Handh or kasni) belonging to Asteraceae family is popularly used since ancient times as food as coffee and fodder and herbal medicine in human life. It can be cultivated everywhere . Leaves are being eaten as salad. Traditionally, it has been used for treatment of liver diseases and as liver tonic [4] . Besides, this is the main component for different herbal remedies, especially in relieving cough. For beverage the roots are roasted and grounded and mixed with coffee to benefit drinkers [5]. The oils present in *Cichorium intybus* are non volatile which are essential fatty acids for mammals, which could be the pathway intermediate and precursors for certain lipid hormones [6, 7]. nucleotide sugar-Uridin-5'- diphosphoglucose, series of glucofructosans between sucrose and inulin beside glucose and fructose are present in its roots. It also contains vitamins like, vitamin A, C, and vitamin B6 [8]. In the previous study, ethanolic extract of *Cichorium intybus* exhibited strong antimicrobial activity [9, 10]. Its medicinal properties are yet to be evaluated in detail and therefore, this present experiment was started with the aim of finding the medicinal and therapeutic properties of *Cichorium intybus*

by experimenting its effects on wound healing using ethanolic extract of *Cichorium intybus*.

II. DISCUSSION

Cichorium intybus have a wide range of pharmacological activities and is used in plant-based remedies for ancient times in different countries. is traditionally used as medicine for diabetes, tumors, wound healing, digestive disorders, inflammation, colilithiasis, gastroenteritis, hepatic diseases, and jaundice. The extract can also be used as antipyretic; it can be used as tonic and purifying agent (11,12-13). Literature review indicated that this medical plant is beneficial for hepatic malformations like many other herbal medicines, which exert protection to liver(14-15), the seeds of *Cichorium intybus* play a liver protective role (16). To administer chicory in a clinic is the safety (high therapeutic index drug). The toxicological property is that it is related to high toxicological effects or mortality related to chicory extract and is safe for human use (17, 18, 19). The Asteraceae family has a risk of allergic reactions, however, more studies are needed to determine the safety of concentration of secondary metabolites . some studies showed that there are no signs of chicory. The chicory is used as coffee and is having cardiovascular protection and help in investigating the antiinflammatory, antithrombotic, and beneficial properties of chicory coffee (20). Our findings are in line with previous studies that demonstrated anti microbial and protective effects of chicory. More experiments are needed to confirm the mechanism of action as well as the safety profile of this valuable medicinal plant .

III. MATERIAL AND METHODS

➤ Preparation of Concentrate:

We investigated the activity of the aerial parts, leaves, and roots . The wound healing activity of the methanolic extract, its sub extracts, and fractions were evaluated the *Cichorium intybus* leaves were washed with distilled water, minced and dried in oven at 50oC for 7 days til it dries fully . The leaves were grinded to a fine powder and stored at 4oC [21]. The powder (250g) was soaked in 500ml of ethanol for 20hrs at room temperature. We filtered the mixture using a muslin cloth and then by filter paper

(Whatman No: 1). The extract was heated in water bath at 40oC to concentrated liquid and dried to a weigh 9.2gm [22]. The concentrate was then made in normal saline during the study [23]

➤ Sample Collection And Inoculation:

The samples were taken from the wounds of burn patients suffering from wound infections. This study was carried out at the Department of microbiology GMC Srinagar, sterile swabs were used to take samples from wounds of all the patients suffering from wound infections in burn ward. With all sterile precautions, the sterile swabs were rubbed carefully on the wounds and the pus samples were collected on the swabs and the swabs were screwed back and sent to the lab where the swabs were streaked on blood agar and MacConkey agar. The maximum organisms isolated from the wound infections were *Pseudomonas aeruginosa*, *Klebsiella pneumoniae*. Further the identification of the organisms were confirmed with automated Vitek 2 system using Vitek 2 cards. The Vitek identification cards were chosen as per the results of the Gram staining [24]. The 0.5 McF of organisms were swabbed on MH agar for sensitivity. We take *Pseudomonas aeruginosa* as test organism and imipenem was used as positive control for it and simple distilled water as negative control.

IV. RESULTS

The zone of inhibition for the chicory extract against *Pseudomonas aeruginosa* was 1.5 cm, for positive control was 1.7 and no zone was found against negative control. The results of this study showed that the ethanolic extract of *Cichorium intybus* used on the culture of infected wound swab by method of agar well diffusion proved that *C. intybus* will accelerate the wound healing.

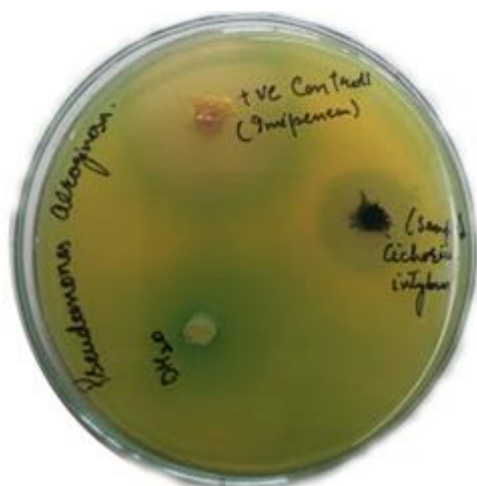


Fig 1. Ethanolic extract of chicory showing zone of inhibition around colonies of *Pseudomonas aeruginosa*

V. CONCLUSION

Chicory extract is beneficial having low price, easily available, and antimicrobial, and after a proper clinical examination, it could be considered an effective antimicrobial drug against organisms causing burn wound infections. The conclusion was that ethanolic extract of *Cichorium intybus* has wound healing potential.

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