A Review on “Pachchai Servai”-A Siddha Formulary Prediction for Chronic Wound

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Abstracts: The Siddha System of medicine is the oldest traditional treatment system generated from Dravidian culture. In siddha system besides herb, metals and mineral drugs are used as medicines. Pachchai Servai is one of the herbo-mineral external medicine has been using for treatment of chronic wound. Chronic wounds present a challenge that is costly in terms of quality of life to the patient. Siddha system of medicine possesses lots of medicines to treat chronic wounds effectively. Pachchai Servai is one of the herbo-mineral external medicine has been using for treatment of chronic wound. Here, an attempt has been made to review the explored ethno pharmacological activities of the ingredients of Pachchai Servai to strengthen the scientific facts favouring this formulation.

Key word: Pachchai Servai, Siddha Formulae, Chronic Wound

INTRODUCTION

Recently there is an increasing trend observed for traditional medicine based research towards providing modern scientific proof and also to obtain leads for the development of certain plant related medicines (Sudha et al, 2012). In Siddha system besides herb, metals and mineral drugs are used as medicines (Rajalakshmi P, 2010). Chronic wounds are defined as wounds, which have failed to proceed through an orderly and timely reparative process to produce anatomic and functional integrity over a period of 3 months (Mustoe et al, 2006). Chronic wounds are also a common secondary complication of other medical conditions such as diabetes, vascular diseases etc (Gail Woodbury et al, 2010) Current estimates indicate that approximately 6 million people suffer from chronic wounds worldwide (Kumar et al, 2007)

Siddhars classified chronic wound under Virana Rogam as Thusta Virana. According to their statement chronic infected wound characters belongs to Thusta Viranam which is characterized by appearance, corals colors / red color and bad smell come from this wounds. Thusta Viranam is also known as Kurathi Pun (Uththamarayan, 2009).

Chronic wounds present a challenge that is costly in terms of quality of life to the patient (Ann horrocks, 2006).

In clinical practices, topical antibiotics are commonly prescribed in wounds, cuts and burns for their potential use in localized cutaneous infections. However frequent and overuse of topical antibiotics can cause problems like development of resistant organisms (Schwartz et al, 2010) Therefore proper management of chronic wound is essential. The initial step in the management of any chronic wound is to remove the local impediments to wound healing by eliminating de-vascularized tissue, necrotic material, and excessive bacterial burden (Ayello et al, 2004). As a result consideration should be directed towards find out an agent that accelerate wound healing either when it is progressing normally, or when it is suppressed by various agents like corticosteroids, anti-neoplastics, or non-steroidal anti-inflammatory agents (Raina et al, 2008). Siddha system of medicine possesses lots of medicines to treat chronic wounds effectively. Almost all these medicines are astringents (Uththamarayan KS, 2009). Though Pachchaiservai is effective for chronic wound their lack of scientific evidence so far to prove it. Pachchaiservai is one of the external medicine has been using for treatment of chronic wound. Different formulae were mentioned in different text for Pachchaiservai. Among them one formula was selected from Sri Lankan Siddha pharmacopeia.

MATERIALS AND METHOD

The data were collected from ancient Siddha text books, some olla leaves, and published research papers. Then all the data were critically analysed.

RESULTS AND DISCUSSION

Necessary details of ingredients of formulae are tabulated in table 1 and 2.

Siddha perspective- Pachchai Servai
Among the ingredients of selected Pachchaiservai, Mercury, Zing sulphate, Copper Sulphate and Sal tree resin has Astringent Property. Sal tree resin and Datura leaves are bitter taste at the same time Coral tree (Murungai) leave are bitter and pungent taste. Mercury, Sal tree resin (Kunkiliviam), Datura leave and Coral tree (Murungai) leave have hot potency. Taste of bitter, and astringent are aggravate Vatha and pacify Kapha, and Pitta, taste pungent aggravate Vatha and Pitta and pacify Kapha, hot potency aggravate Pitta and pacify Vatha and Kapha, mercury has all 6 taste dominated by sweet taste. Sweet taste aggravates Kapha and pacifies Vatha and Pitta (Anaivari et al, 2005), therefore combination of all these properties helps to maintain Tridhoshas in equilibrium. According to traditional medicine, Dhusta Viranam is due to active involvement of Tridosha and the formulae helps to normalitize vitiated Dosha.

In Siddha treatment there are so many drugs for wound healing contain Astringent and also hot potency which are reduce the Exudates amount, promote the dryness of wound and enhance the wound contraction (Uththamarayan KS, 2009).

Thurisu (CuSO₄) is a potent tropical Stimulant, which is responsible for increase blood circulation on affected area and hypoxic condition of chronic wound can reversed.

Ethno Pharmacological aspect:
Tannin, Flavanoid, Saponin, Sterols, Polyphenols and Tri-terpenoids are the phytochemicals responsible for the wound healing activity. Among ingredients of selected formulae, Flavanoids and Saponin present in 3 of 7 ingredients such as Datura, Sal tree resin and Coral tree leave. Flavanoids favor wound healing effect through Antioxidants and free radical scavenging effects, Astringent and Antimicrobial activity and improve vascularity (Sapna Saini, et al 2016).

Likewise Saponin are said to have Antioxidant and antimicrobial activity. Tannin, phenols and Terpenoids are present in sale tree resin and Datura leave. Promote wound healing due to their Astringent and Antimicrobial property and act as free radical scavengers, phenols responsible for wound healing through Free radical scavenging and antioxidant activity and Terpenoids believes to have Astringent and Antimicrobial activity (Sapna Saini, et al 2016). There for the selected formulae encompass almost all the chemicals which responsible for the wound healing effect.

Pharmacological activities, such as Anti inflammatory, Antioxidant Antimicrobial and, Analgesic activity are responsible for wound healing activity (Sapna Saini, et al 2016).

In selected formulae, most of the ingredients such as Mercury, Sal tree resin, copper sulphate, Datura leave and Coral tree leave have antimicrobial/antiseptic property. Antiseptics / Antimicrobial agents are destroying or inhibit the growth and development of microorganisms in or on living tissue. Unlike antibiotics that act selectively on a specific target, antiseptics have multiple targets and a broader spectrum of activity, which include bacteria, fungi, viruses, protozoa, and even prions (Anna Drosou et al, 2013).

Out of 7 ingredients mercury, Sal tree resin and bee wax contain Anti-inflammatory property. The persistence of inflammatory cells in the wound space contributes to elevated levels of Cytokines, including IL-1a, IL-1b, IL-6 and TNF-a5, which promote the inflammatory environment and stimulate the production of tissue-degrading proteinases (McKelvey et al, 2012). Potential important role that, topical anti-inflammatory agents can play in modulating abnormal inflammation that stalls healing (Gary Sibbald et al, 2009). Pain may cause delay in wound healing process by deregulating neuro-endocrine and immune functions which play critical role in wound repair mechanism (McGuire et al, 2006) therefore drug which used to treat chronic wound shoud has Analgesic activity, in selected formulae, Sal tree resin and Coral tree leaves have Analgesic activity, as a result the selected formulae can be employed for pain management of wounds. Sal tree resin, Datura leave and Coral tree leaves possess Antioxidant activity. This promote wound healing by scavenging free radical and promoting collagen synthesis.

When comparing with the ethno pharmacological aspects of these ingredients with Siddha literature strongly indicates that the traditional siddha formulae Pachchaiservai has properties of Astringent, Hot potency, Tropical Stimulant, Antimicrobial, Anti-Inflammatory, Analgesic and Anti oxidant actions, therefore selected formulae of Pachchaiservai can use to treat chronic wound effectively. In future more awareness must be given to the further research. This Pachchaiservai formulation has not been studied for its synergistic pharmacological activities. It is the further need of time to complete pharmacological and clinical studies to protect people from chronic wound.
<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Taste</th>
<th>Potency</th>
<th>Pharmacological action</th>
<th>Photochemical</th>
<th>Indications as per literature</th>
</tr>
</thead>
</table>
Table 2 summary finding of result

<table>
<thead>
<tr>
<th>Wound healing Properties</th>
<th>Numbers of ingredients</th>
<th>Percentages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Astringent</td>
<td>3</td>
<td>42.8%</td>
</tr>
<tr>
<td>Hot potency</td>
<td>4</td>
<td>57.1%</td>
</tr>
<tr>
<td>Antimicrobial</td>
<td>5</td>
<td>71.4%</td>
</tr>
<tr>
<td>Anti-inflammatory</td>
<td>3</td>
<td>42.8%</td>
</tr>
<tr>
<td>Tropical stimulant</td>
<td>1</td>
<td>14.2%</td>
</tr>
<tr>
<td>Analgesic</td>
<td>2</td>
<td>28.5%</td>
</tr>
<tr>
<td>Anti oxidant</td>
<td>3</td>
<td>42.8%</td>
</tr>
</tbody>
</table>

REFERENCE


