

Ayurlog: National Journal of Research in Ayurved Science*A Web based quarterly online published Open Access peer reviewed National E-journal of Ayurved***“Effect of guduchi kwath on the pyogenic bacteria by culture and sensitivity method”**

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ABSTRACT

The study was planned to evaluate the anti-bacterial property of *Guduchi Kwath* on Pyogenic bacteria by culture & sensitivity method for the study, 1 patient was selected & pus sample was used for culture by sticking method & colony characters are observed & gram staining done. Then specially made *Guduchi Kwath* discs are used for sensitivity in MH agar. Zone of inhibition is the criteria of assessment of sensitivity. Whole study was in vitro. The bacteria's during study is *Staphylococcus aureus*. It was observed that *Guduchi Kwath* shows significant activity against above organism.

KEYWORDS:- *Guduchi, Krimighna, Staphylococcus aureus.*

INTRODUCTION

In this modern era we see many patient suffering from various infections due to many causes such as accidents, burn and many others. Neglecting of such wounds, result in suppuration of wound. This pus formation is done by some Bacteria's which are known as '**PYOGENIC BACTERIAS**'. Process of pus formation is called "**Suppuration.**" For prevention and to get relief from infectious diseases, antibiotics are used frequently but its indiscriminate use may lead to resistance or tolerance. Due to development of resistance to antibiotics in present day, there is needed to evaluate new antibiotic which are equally effective.

This could be done by detecting the organism on basis of culture methods and finding out the

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sensitivity of these organisms to particular drug of same properties. There are various methods of culture. In *Ayurvedic* medicines there are several *Dravyas* which also possess '*KRIMIGHNA*' & *Vranashodhak* properties. ***Guduchi* (*Tinospora cordifolia* Willd.)** is one of the *Krimighna dravyas* mentioned by various *Ayurvedic Samhitas* and *Nighantus*.

Bhavprakash described ***Guduchi*** as a ***KRIMIGHNA*** *dravya* ^[1].

According to *Acharya Sushruta*, *Guduchi* describes the *Krimighna* properties with its *Vranashodhak* and *Vranya* properties in *Aaragvadhadi Gana* ^[2] and *Patolyadi Gana*. ^[3]

According to *Acharya Charak*, *Guduchi* describes in "*Tiktakandha*" ^[4] due to its *Tiktarasa* so described in *Guna of Tiktarasa* ^[5] he mentioned.

All this references shows *Krimighna*, *Vranashodhak*, *Vranya* are *Guna* of *Guduchi*. So it may have activity against Pyogenic bacteria's. Culture and sensitivity method generally proves activity of certain drug against certain micro-organism. Sensitivity is decided by seeing zone of inhibition surrounding discs, it indicates susceptibility of microorganism.

AIMS & OBJECTIVES:-

- 1) To study *Guduchi Kwath* & its Anti-bacterial properties.
- 2) To study Pyogenic bacteria.
- 3) To study method of culture & sensitivity.

4) To assess effect of *Guduchi Kwath* on the pyogenic bacteria by culture and sensitivity method.

MATERIAL & METHODS:-

Plant material- :- *GUDUCHI* ^[6]

Drug:- *Guduchi Kwath*

Contents:-1) *Guduchi Kwath*.

Latin Name – *Tinospora cordifolia*.(Willd.)

Family- Mesipermaceae.

Virya-Ushana.

Vipak-Madhur.

Guna- Guru, Snigdha.

Rasa- Tikta, Kashay.

Karma: Krimighna, Kushtaghna, Varnya.

MEDICINAL ACTION- Anti-inflammatory, anti-hepatotoxic, anti-bacterial. Plant pacifies vitiated *Kapha*, *Pitta*, skin diseases, wounds, inflammations, allergy.

FOR PREPARATION OF AGAR –

MacConkey agar, Nutrient agar, Autoclave, Water, MH Agar.

FOR CULTURE AND SENSITIVITY-

Pus sample, Petri dish, Nicrome Wire loop, Incubation hood, Incubator, *Guduchi Kwath* discs.

TOTAL NO OF PATIENTS:- 01

METHODOLOGY-

Pus collected will be:- Infected wound.

PUS samples from infected site of selected

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cases/patient.

- 1) *Guduchi Kwath* prepared from *Guduchi Kand* as described by Ayurvedic tests.
- 2) Agar media for culture of Pyogenic bacteria.
- 3) Pus sample collected from infected site of selective patients to do pus culture by using Mac Conkey agar.
- 4) Gram staining of pus sample done.
- 5) Cultured growth & Gram staining determines pyogenic bacteria.
- 6) Sensitivity of pyogenic bacteria to *Guduchi Kwath* discs analysed by using Nutrient agar, MH Agar.

SELECTION CRITERIA:-**A] Criteria for Inclusion -**

- 2) Pus collection from infected wound.

B] Criteria for Exclusion –

- 1) Patients with HIV and HbsAg. – Positive.
- 2) Patients with fresh wound.

INVESTIGATIONS:- For purpose of examining patient and exclude other diseases.

- 1) Complete Blood Count
- 2) BSL (Random)
- 3) HIV (Tri-dot)
- 4) HbsAg.

STUDY TYPE:- Single case Study. An informed written consent of patient included in study will be taken in the language best understood by them. Their disease and line of treatment will be explained to them. Work done in Dept. of Rog Vigyan and Vikruti Vigyan and Pathology section.

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PREPARATION OF GUDUCHI

KWATH:- ^[7] *Guduchi kwath* is prepared from *Guduchi Kand*.

DISC PREPARATION -

- 1) The material usually required is *Kwath*, Whitman paper no2, forceps, Petri dish & punching machine.
- 2) First Cut paper discs from Whitman No.2 filter paper with the help of paper punching machine (6 mm in diameter).
- 3) Keep this paper discs in prepared *Kwath* for 10 mins. Then place the disc in Petri dish with the help of sterilized forceps.
- 4) Let discs dry for an hour and then stored it in a refrigerator (4°C) and used for sensitivity.

CRITERIA FOR ASSESSMENT:- It will be done by observing zone of inhibition in surrounding discs.

OBSERVATION & RESULT:- In XYZ Male patient age of 52yrs having infective wound. Pus collected from this wound, *Staphylococcus aureus* was found & disc preparation and observed zone of inhibition in surrounding discs was sensitive, so that *Staphylococcus aureus* was sensitive to *Guduchi Kwath*.

DISCUSSION:- Pus formation occurring at the sites of *Ashidhya Vrana* is very much frequently seen now days. Reasons vary with

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resistance to current brand of antibiotics,
Ahitar ahar- Vihar of patients.

According to isolated micro-organism:-

In this study the micro-organism (bacteria) isolated by pus culture method is *Staphylococcus aureus*.

1-Staphylococcus aureus, found in 1 patient.

2-Staphylococcus aureus is sensitive to *Guduchi Kwath*.

CONCLUSION:- Conclusion obtained from present study is as follows

1] *Staphylococcus aureus* is more sensitive to *Guduchi kwath*.

2] *Guduchi kwath* shows antibacterial action against *staphylococcus aureus*.

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