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Conceptual Study Of Herbal Drugs In Embalming

Deepak K. Dobade¹, Rahul Suryavanshi², Poonam D. Dobade³

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1. Ph.D Scholar, Associate Professor, Dept. of Rachana Sharir, Sumatibhai Shah Ayurved Mahavidyalaya, Hadapsar, Pune, Maharashtra, India
2. Associate Professor, Dept. of Rachana Sharir, Sumatibhai Shah Ayurved Mahavidyalaya, Hadapsar, Pune, Maharashtra, India
3. Ph.D Scholar; Dept. of Rachana Sharir, Sumatibhai Shah Ayurved Mahavidyalaya, Hadapsar, Pune, Maharashtra, India

Corresponding Author :- Vd. Deepak K. Dobade Associate Professor, Rachana Sharir Department Government Ayurved College, Jalgaon Mail id- deepakdobade.dd@gmail.com

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ABSTRACT: -

Embalming is an art and Science of preserving human or animal remains by treating them with Embalming fluid to forestall decomposition. *Sushrutacharya* had explained Dissection and Dead body Preservation methods in *Sharir Sankhya Vyakaran Sharir Adhyaya*. *Aacharya Charaka* had stated that the knowledge of *Sthul* and *Sukshma Sharir* is necessary for understanding of *Rachana sharir*. This can only be achieved if cadavers were embalmed properly. Now a days a Prime Chemical, Formalin is used as a Preservative fluid for cadaver embalming. But it has several drawbacks and Health hazards also. Due to this herbal drugs can be used for embalming having minimal or no health hazards. The Prime purpose of this article is to provide a brief knowledge about natural methods of dead body preservation and herbal drugs that can be used for embalming purpose having minimal or no health hazards to anatomist or embalmer.

Keywords: Embalming, Cadaver, Formalin, Herbal drug.



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INTRODUCTION

For better Practical (Dissection) understanding it is essential to restore a normal ante mortem appearance of the cadaver, for the same reason *Acharya Sushruta* had introduced '*Mritsamshodhan Paddhati*' in our ancient classics. *Sushrutacharya* had explained Dissection and cadaver preservation methods in *Sharir Sankhya Vyakaran Sharir Adhyaya* ^[1]. Cadaver is the main tool for teaching gross anatomy by anatomist and other medical educators. People have practiced human cadaver Preservation methods and restoration art since early time for various purposes like religion, belief, tribal warfare, royalty, revenge and knowledge ^[2]. Now a days Formalin is the main constituent of chemical embalming fluid used for cadaver preservation. But it has many drawbacks and health hazards also. Several NCI(National Cancer Institute) surveys of Professionals who are exposed to Formaldehyde in their works, such as anatomist and embalmers, have suggested that these individuals are at an increased risk of Leukaemia and Brain cancer compared to general population ^[3]. Hence it is necessary to minimize the health hazards of formalin or to find out its alternative having no health hazards to the workers such as anatomist and embalmer, in contact with these chemical. As the herbal drugs are known for their health benefits with minimal or no side effects, the present article emphasizes on the characteristics of herbal drugs that can be used for embalming purpose having minimal or no health hazards to anatomist or embalmer and the natural methods of dead body preservation.

AIM

Highlighting the Conceptual aspects of Herbal drugs in embalming.

OBJECTIVES

1. To explore *Ayurveda* as natural and safe method for Cadaver Preservation.
2. To review in detail about herbal drugs that can be used for embalming.

MATERIALS AND METHOD

This conceptual study was undertaken from the data compiled from *Bruhatrayis* and other classical texts including journals, presented papers, previous work done and analyzed with the knowledge of contemporary science on the subject.

Embalming

Embalming is an art and Science of preserving human or animal remains by treating them with chemical to restore its ante mortem appearance or to forestall its decomposition. The chemical constituents (Materials) of embalming fluid used in modern embalming are variety of disin-fecting agents, sterilizing agents, perfuming agent, various dyes, modifying agents (anticoagulants and buffer) and preservatives. Embalming fluids provide a good preservation of organs and tissues together with retention of natural colour of organs. They also pre-vent the bacterial or fungal growth. Formaldehyde is bactericidal, insecticidal, fungicidal and an excellent tissue fixative. So, it is the prime chemical of choice for preservation of dead body. Sodium borate, as pre-serving agent works as insecticide and mild antiseptic. Phenol work against various bacteria, fungi and viruses due to its ability to precipitate and denature proteins. Buffers act as pH balancing agents. It also affords protection against mild growth and bacterial decomposition. Cell Conditioner act to prepare cells for absorption of arterial fluid and helps break-up blood clots. Humectants are added to dehydrated and emaciated bodies to help restore

organs and tissue to a natural and hydrated appearance [4].

Natural Method Of Cadaver Dissection / Preservation (*Mrutsanshodhan*)

According to *Acharya Sushrut*, following points should be taken into consideration while selecting a Cadaver-

- i. Dead body should have all its parts intacted.
- ii. Death should never be due to poisoning.
- iii. Not dead due to chronic disease.
- iv. Cadaver not of hundred years of age obtained.
- v. Faecal material present in the intestine should be removed

Sushrutacharya had described that after the selection of the dead body, it is wrapped either with *Munja* grass, *Valkala* (bark of tree), *Kusha* grass, *Shana* (cannabis plant) etc then tied well and placed inside a cage that should be made to decompose in a dark area for about seven days in a slow run-ning/flowing water of river at a lonely place and allowed to undergo full decomposition then it is taken out and slowly rubbed with brush of one of *ushira*, hair, bamboo and *balvaj* while observing all parts and subparts, external as well as internal [5].

As we have seen that the Chemicals present in modern embalming fluid are having Antimicrobial (Antibacterial, Antifungal,

Antiviral etc.) Anti putrefactive, Anti-inflammatory, Antiseptic and Blood clot dissolving Properties. Similarly, according to *Charakacharya* (in *Aatreyabhadrakapiya Adhyaya*) *Katu* and *TiktaRas-Dravya* are having *Putihar* (Anti putrefactive), *Jantuhar* (Antimicrobial), *Shonit sanghat Bhinnati* (Blood clot dissolving) Properties [6]. *Katu-Tikta ras dravya* are also having Antibacterial, Anti-inflammatory, Antifungal, Antioxidant Properties as found in various researches [7]. Thus, we can say that as a research hypothesis herbal drugs can be used as an alternative to conventional Chemicals of Embalming fluid after Conducting Various Scientific Experiments.

DISCUSSION

The Present article depicts the Similarities of both chemical drugs and Herbal drugs as far as their embalming properties are concerned. Both modern embalming chemicals and herbal drugs are having Antibacterial, Antifungal, Anti putrefactive, Antiviral, Anti-inflammatory, Antiseptic and Blood clot dissolving Properties. Only difference is that Chemical embalming Constituents are having Benefits with health hazards(Side effects), while herbal drugs are natural and safe. Their Properties are Shown as

Chemical embalming drugs Properties	Herbal Drugs Properties
Antimicrobial (Antibacterial, Antifungal, Antiviral etc.)	<i>Jantuhar/Krimighna</i>
Anti putrefactive, Anti inflammatory	<i>Putihar</i>
Blood clot dissolving	<i>Shonit sanghat Bhinnati</i>
Poisonous Property	<i>Vishaghna</i> Property(Health Benefit)

Probable Mode Of Action Of Herbal Drugs In Embalming

Herbal drugs Preferably having Katu Tikta ras like Azadirachta indica, Eucalyptus Globulus, Embelia ribes etc. are having Antimicrobial activities, Anti decomposing ,anti-inflammatory, Blood clot dissolving properties, Tissue non dissolution Property etc. Also these herbal drugs are having anti putrefaction (Preventing anaerobic splitting of proteins by bacteria and fungi) activity. This may be the Probable mode of action of herbal drugs (*Katu-Tikta rasatmak*) for performing embalming ^{[8][9][10][9][11]}.

CONCLUSION

The purpose of Chemical embalming drugs are to forestall decomposition and maintained the life appearance of the cadaver, but at the same time it leads to various health hazards also to anatomist and embalmers who had been in contact with these chemical embalming drugs. *Ayurvedic* method is natural with minimal or no health hazards to Anatomist or Embalmer. Both modern embalming chemicals and herbal drugs are having Antibacterial, Antifungal, Anti putrefactive, Antiviral, Anti-inflammatory, Antiseptic and Blood clot dissolving Properties.

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