



A Brief Review On Design Developement And Evaluation Of Polyherbal Handwash.

Akash B Wankhede¹, Priya M Dandekar².

1- Gawande College of Pharmacy, Sakharkherda

2- Assist. Prof. of Pharmaceutics Department, Gawande College of Pharmacy, Sakharkherda

Abstract - The hands are the primary routes of transmission of infection to patients. Hence, it brings up the use the antiseptic for hand washing purposes. Herbs are known to have antimicrobial properties thus utilization of such herbs as antimicrobial agent is a common practice now. Present study involves formulation of herbal hand Wash using extract of Neem, Tulsi and Aloe vera. The results may be attributed to the phytoconstituents present in the extracts. The formulation also evaluated for the quality parameters.

Keywords: Hand wash, Herbal formulation, Neem and Aloe Vera.

INTRODUCTION:

Hand hygiene is the most crucial step to take in order to stop the spread of dangerous germs and diseases because hands are the primary means of transmission for bacteria and infections [1]. Generally speaking, hand hygiene refers to the practice of washing hands with water, soap, or another liquid. The benefit of washing hands is that it rids them of infections and dangerous substances (bacteria and virus). People who work in the medical industry, restaurants, or who prepare and serve food to the general public should practice good hand hygiene. It is well known that good hand hygiene can reduce the spread of cold viruses and other germs. The greatest technique to maintain personal hygiene and safeguard oneself against infections is to

wash one's hands frequently [2]. In order to avoid the spread of transitory microorganisms and remove soil, grime, and harmful germs, hand washing is the act of cleaning your hands. The number of hazardous microorganisms like E. coli and salmonella that can be carried by people, animals, or equipment and transferred to food is decreased by hand washing, which also removes visible dirt from hands. Hand washing is a vital safety measure to protect the skin from harmful microorganisms and to stop the spread of many contagious diseases [3].

Early in the 19th century is when the idea of washing hands with an antiseptic chemical presumably first came about. A French pharmacist proved in 1822 that solutions containing lime or soda chlorides might get rid of the unpleasant smells associated with human corpses and may be used as disinfectants and disinfectants. This pharmacist recommended that medical professionals and other people caring for patients with contagious disorders soak their hands with a liquid chloride solution in a paper that was published in 1825 [1]

Hand Washing:

It means washing your hands with either regular or antibacterial soap or water. In actuality, it can range greatly from a quick hand rinse to a thorough scrub. In a medical context, hand washing is done to get rid of germs and prevent the spread of pathogenic bacteria. According to reports, most hospital settings still have unsatisfactory levels of hand hygiene, with many doctors and nurses frequently forgetting to wash their hands before coming in contact with patients. According to one study, regular hand washing and other straightforward practices can cut the prevalence of catheter-related bloodstream infections by 66%.

One of the body's most exposed parts, the skin, needs to be protected from viruses. Hand washing is unquestionably a crucial precaution to take in order to protect the skin from harmful bacteria and to stop the development of numerous contagious diseases. Hand washing helps to lower the number of dangerous bacteria on hands and removes visible filth. Salmonella and E. Coli are two harmful bacteria and viruses that can be carried by people, animals, or equipment and transferred to food. The bulk of bodily activities are carried out by the hands, which are also exposed to a variety of substances, such as soil when farming, food while cooking, touching raw and contaminated food, and personal hygiene products. Hand washing is frequently stressed as the single most critical step in any infection control programme for preventing the cross transmission of microorganisms between patients because clean hands stop the spread of germs [2]

Benefits of using herbal hand wash:

- 1 Herbs are readily available in both urban and rural settings, making it simple for everyone to use them.
2. Affordable: Herbal plants are less expensive than the chemical components found in synthetic hand wipes.
3. Enhanced effectiveness: Herbal hand soaps work better to encourage good hand hygiene.
4. Less adverse effect: Compared to other hand washes, herbal hand washes have fewer side effects

Antibacterial Activity and Antimicrobial Activity

Definitions:

- Antibacterial Activity: The ability of a substance or agent to kill or inhibit the growth of bacteria.
- Antimicrobial Activity: A broader term that refers to the ability of a substance or agent to kill or inhibit the growth of a wide range of microorganisms, including bacteria, viruses, fungi, and protozoa.

Key Differences:

- Spectrum of Activity: Antibacterial agents typically target specific types of bacteria, while antimicrobial agents can target a broader range of microorganisms.
- Mechanism of Action: Antibacterial agents may work by inhibiting cell wall synthesis, protein synthesis, or DNA replication in bacteria, while antimicrobial agents can have various mechanisms of action depending on the type of microorganism.[4]

Applications:

- Infection Control: Antibacterial and antimicrobial agents are used in healthcare settings to prevent and control infections.
- Food Safety: Antimicrobial agents can be used to preserve food and prevent spoilage.
- Personal Care: Antibacterial hand soaps, toothpaste, and other personal care products contain antimicrobial agents to help prevent the spread of infections.

Examples of Antimicrobial Agents:

- Natural Agents: Tea tree oil, garlic, and honey have antimicrobial properties.[5]
- Synthetic Agents: Triclosan, benzalkonium chloride, and chlorhexidine are commonly used antimicrobial agents.
- Antibiotics: Antibiotics are antimicrobial agents that are specifically designed to target bacteria.[6,7,8]

Importance:

- Public Health: Antimicrobial agents play a crucial role in preventing and controlling the spread of infections.
- Food Preservation: Antimicrobial agents help to preserve food and prevent spoilage, reducing foodborne illnesses.
- Healthcare: Antimicrobial agents are essential in healthcare settings to prevent and treat infections.

Objective of the study:

1. To achieve sustained improvement in hand hygiene compliance ratio
2. To kill germs and microorganism that can harm our body
3. It will help to learn their illness are often caused by germs which travels from their hands to their mouth, eye, nose etc.
4. Reduces the rates of healthcare associated infections[9,10,11]

Conclusion:-

Literature reveals that leaves of Neem (*Azadirachta indica*) possess Antimicrobial property, leaves of Pudina possess Antibacterial activity, and extract of clove possess Antibacterial activity. Hence the present study was designed to formulate polyherbal hand wash having Antimicrobial and antibacterial properties the poly herbal hand wash was found to be light green colour non greasy smooth in texture and easily washable with a good PH near to normal skin PH range .No skin irritation wash observed while using it for few days .[12,13]From all the studies we can finally states that polyherbal hand wash has shown cleansing action with no skin irritation and easy to use as it is polyherbal hand wash ,so decreases the chances of side effects.

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