

Design Thinking Plausible Ancient Indian Alchemical Topical Drug Mechanism for Healing Wounds – A Mechanistic Approach

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Abstract: Vanishing ancient technologies have in them a vast treasure of mystique methods or techniques that have to be researched to verify their compatibility with modern technologies. Of them, Alchemy, especially Indian alchemy has its own everlasting contribution in the fields of chemistry, material, science, medicine and metallurgy. These days, enough research attention has gathered around it and its mechanisms. However, only few have attempted to explore their possible/plausible healing mechanisms, especially, involving mechanistic philosophy, part and whole schema and design thinking- which is a novelty of this work. In this work, an endeavor is made to agglomerate the aforementioned philosophies for generic exploration of an ancient Indian alchemical topical application mentioned in anachronistic texts.

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I. Introduction

Indian Alchemy is a systematic investigation process into nature's aforementioned methods and reverse engineering them to several wide ranged applications is beneficial to humanity. It starts from investigation and continues as philosophical and spiritual discipline through an interdisciplinary amalgamation of metallurgy, chemistry, physics, astrology, occult theories and mysticism. Toughest are the procedures and arduous are their synthesis methods, as one aims at converting nature's signature materials like plants, minerals, poisonous stones and metals into medicine / drugs, which has to be suitable for internal administration. Ancient metallurgical thoughts are no doubt an off shoot of alchemical metal treatment procedures, when one compares and contrasts them from Tantrashastras, Rasagrandhas, Vimanashastra (Aero dynamic vehicles), Vedas and Upanishads etc. The light weighted metals of Vimanas, Batteries mentioned in Agasthyasamhitha, Tree or Bio agricultural techniques that inspired Rudolf Steiner, Mercury engine described by Bhoja's Samarangana sutradhara, more than 20,000 operating furnaces mentioned in British records of 18th century are few traces in astounding legacy of the Indian Alchemy. It is noteworthy to mention here that all these inter-disciplined subjects were inseparable till Tantric period. Many interesting research avenues are awaiting using ancient Indian Alchemical texts, which can especially unlock, even certain challenging biomedical problems, through these metallic medicaments. Explorations in the fields of Astronomy, Alchemy, Metallurgy / Black smithy went parallel those days and there are evidences where some researchers have shown the similarity of quenching liquids adopted by earlier mentioned texts. The present investigation has attempted an explanation into these traditional metal treatment procedures and triggered some biomedical insights and solutions through these metallurgical applications (Sattvapathana) [1-11].

Mapping ancient insights, especially their holistic approach towards the human body and nature, (in alchemy, between minerals and metals) with modern technical know - how is really both interesting and challenging tasks. Uncovering science and history, needs parallel thinking of the researcher, where profound knowledge of any one shall be inadequate unravel its mysteries. The predominant instinct like urge to know the secrets of nature, especially, about minerals, metals and herbs is common in all countries and alchemy (metallurgy + medicine + chemistry) in ancient India too add its origins in accumulation of the arts in order to meet human substantial needs.

In many fields, especially science, satisfactory explanation relies on possible and plausible mechanism-approached by mechanistic philosophy. A mechanism simply performs things. It has a part-whole schema involving-component, causal, organizational aspects. Possible mechanism discovery has been attempted by several researchers involving several strategies; accordingly Backward chaining is a deductive reasoning starting from the entities and activities in the later stages in a mechanism to explore possible/plausible entities and activities earlier in the process. Mechanisms can be experimented with several ways by intervention and observing – at phenomenon level and mechanism level-opening ways to explore strategies, which several

researchers have attempted [12-15]. Design thinking is as a critical process - analysis and creative involving left and right brains- engaging a human in domains to experiment, create and recreate any part /product/ process /a system [16]. However, design thinking does not apply in certain areas which has been attempted in this work- Ancient Indian Alchemical drug healing mechanism for healing wounds.

In this work, research has been carried on the ancient lines of thought, such as how they perceived materials as living entities and how they transmuted their potential into daily challenges humanity faced, especially in the field of medicine; this led us towards design thinking, imbibed with part-whole schemata and mechanistic philosophy to explore the possible mechanism of wound healing in those days consisting of paralysis treated three myrobalans (Mashi) and honey.

II. Design Thinking –Wound Healing

During wound healing process- in Hemostasis phase – the carbon present in the aforementioned formulation accelerates the shape shifting of the platelets and thereby enhance the platelet activation. Hydrogen bonds innate in honey enable the receptors on activated platelets towards strong and enhanced aggregation which form a plug at the possible leak. At last, leading towards the formation of fibrin-a net that holds the platelets held firmly may be due to hydrogen bonding. Hence, individuals having self healing lacunae-too few platelets, abnormal platelets, platelets that are not functioning normally, or deficiencies of clotting factors- may not form normal clots and may suffer from excessive bleeding which is taken care of by this formulation. If earlier Phase is primarily about coagulation, the latter, called the Defensive/Inflammatory Phase, accentuates on destroying bacteria and removing debris—in essence, preparing the wound bed for the growth of new tissue. Ancient alchemical texts consider honey as having special attributes like- heaviness, oily, hard, rough, dull, slow, dense, gross, clear, fluid, soft, cooling, and slimy - and organic carbon imbibed with innate earth properties- heaviness, oily, hard, rough, dull, slow, dense, gross, and clear –contribute as tags of the vital components in triggering these activities. Apart from this, as per sushruta samhita honey has cheda- breaking properties, sukshma marganusari- subtle penetrating properties, lekshana- scrapping the inner layers, which aid in opening of blood vessels to allow oxygen and fresh nutrients- enhancing the healing abilities and help microphages to fight the infection and facilitate in the repair process [1-11]. In the latter stages, . Blood cells, including oxygen-rich red blood cells, arrive to help build new tissue. [17- 19].

Mashi consists of activated carbon (AC) occurred due to pyrolysis- decomposition of organic components that occurs at high temperatures in absence of oxygen- that enables complex organic molecules to break down to simpler and hence fundamentally and irreversibly alter the properties at molecular level- especially adsorption power. Particle size and adsorption are inversely proportional. There are two critical activities/ properties/components of AC- adsorptive pores, creating absorptive properties and transparent pores, creating others. Especially, the absorptive properties of AC play predominant role in removing bacteria [20-21]. Paul W. Scharff M.D. highlights carbon as a plastician- owing to its capability of shaping and reshaping the organism [22]. Rudolf steiner reasons emergence of black from green- from the process of burning the organic through pyrolysis. Hence he maintains black colored carbon as the spiritual image of the lifeless [23,24]. He further mentions a vital activity of the carbon: The form that is destroyed gives rise to formative activity- means form forces radiate into the targeted area (wound) out of the elimination of form of the substances (Triphala-earlier eliminated in burning process). This may be facilitating the proliferative and maturation phase of the wound, especially in the reorganization of collagen fibers. Researchers found that heat delayed the wound healing process in mice and aforementioned affordances of honey as per ancient alchemical texts- cooling, clear and slimy tags- may aid in the healing process [25 – 26]. In other words permanence of microphages, which is a signifier of delayed wound healing –as observed in elevated temperatures of 43°C –must be taken care of by cooling effect of honey. Even though the exact mechanism is not clear, carbon having free electrons may be a conductor of heat and is diamagnetic- regulating the Heat from sunlight and may be modulating the synthesis of tropoelastin, elastin, and fibrillin-1, ending in the development of solar elastosis. However, abnormal elastic fibers arise in Fibrillin-1 gene expression arose due to lack of optimal thermal conditions must be compensated in controlling the vibration of carbon particles by honey and there by regulating heat. The other problem pertaining wound healing is prolonged chronicity- attributed to strong wound colonization (formation of bacterial biofilm formation) - that may be dealt with penetration and braking properties of honey with etheric forces surrounding the carbon particles as claimed by shape power, as per some researchers; however, research on these lines is still under the way and strong theories are yet to be built [20-21, 25-26].

III. Conclusion

A Design thinking approach embryonic with part –whole schemata with mechanistic explanation is endeavored here. Mechanistic explanation affords to an in detailed account of the whole in terms of the causal attributes of the basic parts. The Phenomenal explanation attempts at a complex system behavior and its development- of ancient Topical drug healing mechanism for wounds. Many theories are yet to be built on the

exact mechanisms and more detailed investigations are yet to be made; However, the possible built attempts may trigger some insights to the researchers of the similar research domain, which is the major effort of this work.

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