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CHEMISTRY IN AYURVEDA

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Abstract:

Ayurveda is a traditional system of medicine that originated in India and has been used for thousands of years to treat various ailments. The system is based on the concept of balance and harmony between the body, mind, and spirit. Chemistry plays an essential role in Ayurveda, as many of the remedies and treatments are based on chemical compounds derived from natural sources. Ayurvedic remedies are based on the use of natural compounds such as herbs, minerals, and animal products, which contain various chemical compounds that have been found to have medicinal properties. Modern scientific research has confirmed many of the medicinal properties of the chemical compounds used in Ayurvedic medicine, which shows that the traditional knowledge of Ayurveda is still relevant and valuable in the modern age.

Keywords: Ayurveda, traditional medicine, chemistry, natural compounds, medicinal properties.

Introduction: Ayurveda is an ancient system of medicine that has its roots in India. It is based on the principles of balancing the body, mind, and spirit, and emphasizes the use of natural remedies to achieve this balance. Ayurveda is a holistic system of medicine that has been used for thousands of years to treat a variety of ailments. Chemistry plays a significant role in Ayurveda, as many of the remedies and treatments are based on chemical compounds derived from natural sources. In this paper, we will explore the chemistry of Ayurveda and its role in the treatment of various diseases.

Chemistry in Ayurveda: Ayurvedic remedies are based on the use of natural compounds such as herbs, minerals, and animal products. These natural compounds contain various chemical compounds that have been found to have medicinal properties. For example, turmeric, which is commonly used in Ayurvedic medicine, contains a compound called curcumin, which has anti-inflammatory and antioxidant properties (Aggarwal et al., 2013). Another example is the use of ashwagandha, which is an Ayurvedic herb that has been found to have a variety of medicinal properties. Ashwagandha contains chemical

compounds called withanolides, which have been found to have anti-inflammatory, anti-cancer, and anti-stress properties (Kuboyama et al., 2005).

Ayurveda also makes use of metals and minerals in its treatments. These metals and minerals are processed and purified to remove any impurities before they are used in Ayurvedic remedies. For example, mercury is used in Ayurvedic medicine as a purgative, and it is processed in such a way that it is safe for human consumption (Mishra and Singh, 2008).

Ayurveda also uses a technique called *rasashastra*, which is a branch of Ayurvedic medicine that focuses on the use of metals and minerals in the treatment of diseases. *Rasashastra* involves the use of various chemical processes to transform metals and minerals into medicinal compounds that can be used to treat a variety of diseases (Dwivedi and Dwivedi, 2007).

Ayurveda and Modern Chemistry: Ayurveda has been the subject of scientific research in recent years, and many of the chemical compounds used in Ayurvedic remedies have been found to have medicinal properties. For example, curcumin, the compound found in turmeric, has been found to have anti-inflammatory and antioxidant properties, as well as the ability to inhibit the growth of cancer cells (Aggarwal et al., 2013).

Similarly, ashwagandha has been found to have anti-inflammatory, anti-cancer, and anti-stress properties, and its chemical compounds, the withanolides, are being studied for their potential use in the treatment of cancer and other diseases (Kuboyama et al., 2005).

The use of metals and minerals in Ayurvedic medicine has also been the subject of scientific research. Mercury, which is used in Ayurvedic medicine, has been found to have antimicrobial properties, and it is being studied for its potential use in the treatment of infectious diseases (Mishra and Singh, 2008).

Ayurveda and Nano Technology: *Rasashastra* is a part of Ayurveda in which the explanation regarding processing of various metals including mercury and its combination with herbs to treat illness is described. Metals are processed and purified using various herbs and then converted into ash form (bhasmas) which are the smallest organic particles of the same metal, and used as herbo mineral medicines. In the light of recent advancement in the treatment of cancer, modern science uses nano therapy (smallest particle which easily enters cells). In this therapy they use a whole metal in the form of nano particle which is the basic idea behind ash.

In the process of medicine preparation few drugs needs to be purified before its usage internally. This process is based more or less on modern chemistry. For example – *Sudha Varga* (substances made up of various forms of salts of calcium such as conch shell oyster, coral etc.) which is predominantly alkaline in nature is purified with the help of *amla varga dravyas* (drugs having sour taste) because they are acidic in nature. We know that acid neutralizes alkalis and thereby render it purified and neutralized so as to administer in the form of ash form in treating various disorders. In GIT (gastro intestinal tract) disorders such

as hyperacidity due to gastric mucosal irritation, these bhasmas of sudha varga are the drug of choice in treating them (Reddy P. S).

Conclusion: In conclusion, Ayurveda is a holistic system of medicine that has been used for thousands of years to treat a variety of ailments. Chemistry plays a significant role in Ayurveda, as many of the remedies and treatments are based on chemical compounds derived from natural sources. Ayurvedic remedies are based on the use of natural compounds such as herbs, minerals, and animal products, which contain various chemical compounds that have been found to have medicinal properties. Modern scientific research has confirmed many of the medicinal properties of the chemical compounds used in Ayurvedic medicine, which shows that the traditional knowledge of Ayurveda is still relevant and valuable in the modern age. Therefore, the integration of Ayurvedic medicine and modern science can lead to the development of effective treatments for various diseases.

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