



AYURVEDIC MEDICINES AND ADVERSE REACTIONS: A MODERN PERSPECTIVE

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ABSTRACT-

Ensuring drug safety is a fundamental principle in medical practice, crucial for evaluating patient safety across various medical systems. Adverse drug reactions (ADRs) significantly contribute to this assessment. Consequently, pharmacovigilance studies are vital for understanding treatment outcomes. One emerging concern in complementary and alternative medicine (CAM) systems, like Ayurveda, is the rise in safety reports and their misinterpretation, which negatively impacts these systems. Despite Ayurveda's holistic nature and its detailed explanations of drug-induced consequences and preventive measures, the data in classical texts is scattered. Hence, the integration and analysis of this data with modern drug safety concepts is urgently needed. The current literature review draws from various Ayurvedic compendiums and electronic databases using search terms like 'Vyapad,' 'Viruddha,' 'Ahita,' 'herb-herb interaction,' 'idiosyncrasy,' and 'Prakritiviruddha.' The collected information was analyzed to correlate ADR concepts and current pharmacovigilance science. Overall review demonstrated that drug interaction, iatrogenic, over dose, administration of unsuitable drugs, reprehensive drug administration with respect to disease, complication from five procedural therapies (*Panchakarma*) and reprehensible preparation of mineral drug are nearer to the modern causes of ADR. please change it without changing its meaning. The concept of drug safety and adverse drug reactions (ADR) is not unfamiliar to Ayurveda. The Ayurvedic notion of "Abheshaja," which refers to a substance unsuitable for use as medicine, is akin to modern pharmacovigilance.

Keywords- Adverse drug reaction, Ayurveda, Pharmacovigilance, Viruddha Ahara.

Introduction-

In *Ayurveda* education system in India or *Ayurveda Shastra* while defining the purpose of *Ayurveda*, remedies are given to maintain the health of a healthy person and to alleviate the disorders of a disordered person. While defining this, *Ayurveda* has described in detail about the daily routine of a healthy person as well as the seasonal cycle and also has shown the importance of maintaining the health of a healthy person by describing the ethics and morals. In the same way, the safety of the patient and the possibility of avoiding any harm is given importance. Drug safety is a very important concept in medicine. Recently there has been a huge increase in the number of people taking herbal medicinal products as nutritional supplements.

In *Ayurveda*, cause and effect theory is mentioned, that is what we call satakaryavad, that is, without recognizing or ignoring any reason behind the incident, we can face many problems. So if we want to keep away from this, it is necessary to implement it scientifically in *Ayurveda* and in the same way to make it scientific we need to meet the information that has come in *Ayurveda* regarding adverse drug reaction.

Pharmacovigilance is essential for ensuring drug safety and enhancing treatment outcomes. The World Health Organization (WHO) defines pharmacovigilance as the scientific discipline and activities aimed at identifying, evaluating, understanding, and preventing adverse effects or other drug-related issues. *Ayurveda* has long emphasized the importance of safe treatments, aiming to alleviate disease without causing additional health problems.¹

In the *Ayurveda Samhita* texts, the medicine produced from the *Dravya* i.e. the usefulness of the kalpa produced from the *Dravya* i.e. the harm caused by it, similarly preventive measures have also been suggested. Similarly, the age-wise dosage of medicines and their safety and adverse reactions are detailed in *Ayurveda*. In this article we are going to discuss the concept of ADR as mentioned in *Ayurveda* as well as new preventive measures and safety of it.

Causes of ADR-

Allopathy and *Ayurveda* give same reasons for ADRs like *vipaka kalpana*, *rasakalpana*, *virya kalpana*, drug interaction, Purusham Purusha differentiation, patient's *sattva*, drug dose etc. *Ayurveda* pays attention to patient's health interest at different levels.

- *Ahitatama dravyas*
- *Rasaushadi* - wrong way utilization
- *Avastanusara dravyaprayoga*
- *Virudda dravya prayoga*
- *Vaidhyakruti*
- *Atimatra dravya prayoga*
- *Panchakarma vyapad*

Nowadays there are different formulations, in the same way taking different medicines of different pathologies at the same time, in the same way OTC over the counter medicines are becoming non-adherence by the patient. In the same way different pesticides and insecticides have a lot of effect on the body, chemical interactions can lead to manure.¹³

Similarly, there are many misconceptions about *Ayurvedic* medicine i.e. whatever is said in Ayurveda, there are many misconceptions about it. Natural medicines are safe and non-toxic, but this is not true.²

Adverse Drug Reactions (ADRs) in Ayurveda

Definition and Terminology:

In Ayurveda, ADRs are referred to as "*Aushadha Vyapata*". This term encompasses any unintended or extra actions of a drug in the human body, beyond its intended therapeutic effect. These reactions can include side effects, toxic effects, and idiosyncratic effects, similar to those in modern pharmacology.

Historical Perspective:

Ancient *Ayurvedic* scholars were aware of the potential for drug toxicity and documented these in their texts. They emphasized the importance of proper processing and usage of herbal medicines to minimize risks.

Ayurvedic texts mention various causes for ADRs, which are not much different from those explained in modern pharmacology. These include:

- **Excessive effects:** Overdosing or prolonged use of a drug.
- **Drug interactions:** Interactions between different drugs or between herbal and conventional medicines.
- **Drug intolerance:** Susceptible patients may have adverse reactions to certain drugs.
- **Idiosyncrasy:** Unpredictable reactions that occur in some individuals.
- **Drug allergy:** Allergic reactions to specific drugs.

Pharmacovigilance in Ayurveda:

The Ministry of AYUSH in India has initiated a Pharmacovigilance Program to monitor and report ADRs for Ayurvedic, Siddha, Unani, and Homeopathy (ASU&H) drugs. This program aims to establish a database of ADRs and develop evidence-based recommendations for the clinical safety of ASU&H drugs.

Challenges: Monitoring and reporting ADRs in Ayurveda face several challenges, including underreporting and lack of standardized reporting protocols. There is also a misconception that all natural drugs are safe, which can lead to improper use and increased risk of ADRs⁴.

Recommendations: To enhance pharmacovigilance practices in Ayurveda, it is recommended to:

- Develop regulatory frameworks for herbal medicines.
- Educate healthcare providers on the importance of reporting ADRs.
- Raise public awareness about the potential risks of herbal medicines.

ADR IN AYURVEDA:

1. **Lead Poisoning:** Some traditional Ayurvedic formulations contain lead, which can cause lead poisoning if not properly processed. Symptoms of lead poisoning include abdominal pain, constipation, and neurological issues³.
2. **Mercury Toxicity:** Mercury is used in certain Ayurvedic preparations like Rasasindura. Improper purification can lead to mercury toxicity, resulting in symptoms like tremors, memory problems, and kidney damage.⁴
3. **Aristolochic Acid Nephropathy:** Herbal products containing Aristolochia can lead to kidney damage due to the presence of aristolochic acid. This can cause symptoms such as proteinuria and renal failure.
4. **Guggulu-Induced Skin Rashes:** Guggulu, a resin used in many Ayurvedic formulations, can cause skin rashes and gastrointestinal issues if consumed in excessive amounts or improperly processed.
5. **Swarnabhasma (Gold Salt) Toxicity:** A case was reported where a 35-year-old woman with hepatitis took Ayurvedic powder medicine containing gold salt (swarnabhasma) and developed worsened liver injury and nephrotic syndrome.⁵
6. **Digestive Issues:** Overuse or improper preparation of certain Ayurvedic herbs can lead to digestive problems such as abdominal discomfort, diarrhea, nausea, and vomiting.
7. **Allergic Reactions:** Some individuals may experience allergic reactions to specific Ayurvedic herbs, resulting in symptoms like skin rashes, itching, and swelling.
8. **Hepatotoxicity:** Certain Ayurvedic formulations containing heavy metals or toxic herbs can cause liver damage if not properly processed. Symptoms may include jaundice, fatigue, and abdominal pain.
9. **Neurological Effects:** Some Ayurvedic medicines, especially those containing heavy metals like lead and mercury, can cause neurological issues such as tremors, memory problems, and cognitive dysfunction.
10. **Cardiovascular Problems:** Excessive use of certain Ayurvedic herbs can lead to cardiovascular issues, including increased heart rate, palpitations, and blood pressure fluctuations.
11. **Ashwagandha Overuse:** While Ashwagandha is commonly used for stress and energy, excessive use can lead to gastrointestinal issues, such as stomach upset, diarrhea, and vomiting.
12. **Bhasma-Related Toxicity:** Bhasma are metallic and mineral preparations used in Ayurveda. If not properly processed, they can lead to toxic reactions. For example, improperly prepared Tamra Bhasma (copper preparation) can cause copper toxicity, leading to liver damage and anemia.

13. **Ephedra (Ma-Huang):** This herb, used for weight loss and asthma, contains ephedrine, which can cause severe cardiovascular side effects, such as high blood pressure, palpitations, and even heart attacks.
14. **Neem Oil Poisoning:** Ingesting large quantities of neem oil can be toxic, especially for children, causing symptoms like vomiting, seizures, metabolic acidosis, and in severe cases, death.
15. **Heavy Metal Contamination:** Some Ayurvedic preparations have been found to contain heavy metals like lead, arsenic, and mercury, which can lead to various toxic effects, including neurological and renal damage.
16. **Ricinus communis (Castor Oil Plant):** Improper use of castor oil or its seeds can lead to ricin poisoning, which can cause severe abdominal pain, diarrhea, and dehydration.

These examples highlight the importance of proper preparation, dosage, and usage of *Ayurvedic* medicines to avoid adverse reactions. Always consult with a qualified Ayurvedic practitioner before using any herbal remedies.

CONCLUSION:

Adverse drug reactions in Ayurveda, though often underreported and less understood, are a crucial aspect of holistic medicine that require careful consideration. Despite the natural origins of *Ayurvedic* treatments, improper use, incorrect dosages, and lack of standardization can lead to serious health consequences. By integrating traditional wisdom with modern pharmacovigilance practices, the safety and efficacy of Ayurvedic medicines can be significantly enhanced. This ensures that patients can benefit from the therapeutic potential of Ayurveda while minimizing risks. Therefore, it is imperative for practitioners and users alike to stay informed, vigilant, and proactive in reporting and managing ADRs, paving the way for a safer and more reliable future in Ayurvedic healthcare.

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