



ROLE OF POLYPHARMACY IN GERIATRICS- A REVIEW

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Abstract

The science Ayurveda mentioned Jara (Geriatrics) as one among the Ashtanga Ayurveda. Pathophysiology of jara has been explained in detail with the signs and symptoms at the level of dosha, dhatu, agni, indriya, srotas and ojas. In Ayurveda, many Acharya have mentioned various types of Rasayana (rejuvenation) therapy in geriatrics. Concept of Polypharmacy is common in adults due to multiple co-morbidities, chronic pain and other associated disorders. Polypharmacy can be defined as the use of multiple medications in a patient, commonly an older adult. Polypharmacy is often associated with decreased quality of life including decreased mobility and cognition. Elderly people require specific attention to medications who are subjected to polypharmacy and this polypharmacy in combination with geriatric status may increase the risk of drug interactions or adverse drug reactions as Pharmacokinetic and pharmacodynamic changes arise with older age resulting in impairing their ability to metabolize and respond to drugs. OTC drugs are medicines sold directly to a consumer without a requirement for a prescription from a healthcare professional. Serious conditions arise with OTC drugs or therapeutic healers or quacks who will not only administer herbal products but ignorant quacks will administer herbo-mineral drugs on long term leading to emergency conditions. Serious health issues are arising out of polypharmacy without proper consultation and increase of self medication. Hence this review focuses to throw a light on the concept of polypharmacy in geriatric group along with Ayurveda concept.

Keywords: Polypharmacy, Geriatrics, OTC drugs, Rasayana

Introduction

In Ayurveda, Jara (Geriatrics) has been mentioned as one among Ashtanga Ayurveda. Pathophysiology of jara has been explained in detail with the signs and symptoms at the level of dosha, dhatu, agni, indriya, srotas and ojas. In Ayurveda Acharya Charaka, Sushrutha and Vagbhata have mentioned various types of Rasayana (rejuvenation) therapy in geriatrics. They have explained rasayana therapy for disease conditions and also to normal elderly individual. Thus we have preventive and curative aspect of rasayana in geriatrics. Common

disorders mentioned in jaravastha are sandhivata, kampavata, anidrata etc. All rasayana therapy is rich in anti-oxidants and free radical scavengers as these therapies improve quality of life in geriatrics.

Polypharmacy is the use of multiple medications in a patient, commonly an older adult. Concept of Polypharmacy is common in adults due to multiple co-morbidities, chronic pain and other associated disorders. The prevalence of polypharmacy is estimated to be between 10% and 90% depending on the definition used, the age group studied and the geographic location [1]. Positive polypharmacy are beneficial from provided prescription is evidence based, reflects patient clinical condition and consider potential drug. Managing polypharmacy works diligently with patients and families to secure accurate list of medicines. Excessive polypharmacy alters the gut micro biome and is reversible with deprescribing the drug cautiously under medical supervision. Polypharmacy also increases the burden of medication taking particularly in older people and is associated with medication non-adherence [2]. Polypharmacy is often associated with decreased quality of life including decreased mobility and cognition [3]. Patient factors also influence the number of medications; include a high number of chronic conditions requiring a complex drug regimen. Other systemic factors include a patient having multiple prescribers and multiple pharmacies that may not communicate.

Geriatrics or geriatric medicine is a medical specialty focused on providing care for the unique health needs of the elderly [4]. Geriatrics word originates from the Greek word means “old man”. Elderly people require specific attention to medications who are subjected to polypharmacy (taking multiple medications) at their accumulation of multiple chronic diseases. Many of these individuals have also self-prescribed and also into over-the-counter (OTC) drugs. This polypharmacy in combination with geriatric status may increase the risk of drug interactions or adverse drug reactions as Pharmacokinetic and pharmacodynamic changes arise with older age resulting in impairing their ability to metabolize and respond to drugs. Therefore geriatric individuals require specialized pharmacological care concerned to these age-related changes. Hence this review has been taken up to through a light on the concept of polypharmacy in geriatric group along with Ayurveda concept.

Observations

Heart disease: In serious heart issues, life saving drugs used is aspirin, ACE inhibitors, anti-arrhythmic drugs, anti-coagulants and beta blockers. The drug arjuna reduces inflammation, improves blood circulation and lowers the cholesterol. Therapies like various panchakarma treatments are done.

Diabetes: Ashwagandha lowers sugar level, manage stress level, improve sleep, muscle growth. Drugs having antidiabetic property with anti-oxidant property, lower sugar level, lowers stress, fatigue, improves immunity and insulin sensitivity. Different therapies like basti are administered and virechana is done and also local snehana and swedana are done to improve degenerative changes.

Chronic constipation: Here fiber intake and osmotic laxative are administered. Drugs encourage bowel movements, acts as digestive, carminative and acts as mild purgatives. Major OTC products used in these conditions may lead to abused laxatives. Lazy colon, colon inflammation, IBS on long run may lead to colon cancer.

Mental health: Anti-depressants, anti-psychotics and mood stabilizers are commonly used. Classical abhyanga and dhara are the best remedy which balances mental, emotional and physical state. Leads to well being, preventing stress and depression especially padabhaynga is very effective in insomnia.

Bone and joint related disorders: NSAID drugs, anti-inflammatory, analgesics are used to reduce joint inflammation, to improve digestion and to promote health. Mainly panchakarma therapies and also other therapies like janu, kati, greeva basti are done externally to facilitate mobility and also to improve quality of life.

Some preventive care drugs used are amalaki rasayana, ashwagandha, vidanga, guduchi, mandukaparni, pippali rasayana, medhya rasayana, etc, more than 30 drugs have been mentioned in the classics. Some set of drugs mentioned for curative of diseases are yashtimadhu, shatavari, shilajatu, haridra, lashuna, guggulu, rasna etc.

Over-the-counter (OTC) drugs

These are medicines sold directly to a consumer without a requirement for a prescription from a healthcare professional [5]. OTC drugs are usually regulated according to their active pharmaceutical ingredient (API) rather than final products. In other words, the term over-the-counter (OTC) refers to a medication that can be purchased without a medical prescription. OTC products are categorized based on the extent of evidence, based on safety, therapeutic index, accessibility and availability. Knowledge, common sense and responsibility of the patients play a vital role. Serious conditions arise with OTC drugs or therapeutic healers or quacks who will not only administer herbal products but ignorant quacks will administer herbo-mineral drugs on long term leading to emergency condition.

Causes of polypharmacy in geriatric population

To enlist the causes of polypharmacy in geriatric population includes,

- Increased co-morbidities in this population
- Self-medication by the patients with over-the-counter drugs without awareness and clear understanding of the adverse reactions and interactive effects pertaining to these medications.
- One patient often consults multiple physicians and continues with each prescription
- Use of alternative science medications without proper consultation

Risk of Polypharmacy

The risk of polypharmacy increases with age, decrease slightly after age 90 years. Poorer health is a strong predictor of polypharmacy at any age, although it is unclear whether the polypharmacy causes the poorer health or if polypharmacy is used because of the poorer health. It appears possible that the risk factors for polypharmacy may be different for younger and middle-aged people compared to older people [5].

Discussion

Geriatric age group most commonly being affected with systemic diseases and are into intake of multiple medications at a time. Usages of OTC drugs are more common in this age group due to suffering from chronic ailments and also their mental status. Patients who receive unknown powders or tablets adulterated with drugs such as steroids in the name of Ayurvedic medicine especially for arthritis and asthma has serious negative impact on the health and also on the concerned science. Drugs do exhibit synergistic as well as antagonistic effects when used along with co-mentioned medicines. An herb contains several pharmacologically active constituents which work synergistically to produce significant effects. When it is used with other drugs it may act synergistically or antagonistically arising a need to analyze their positive as well as negative effects.

With the increased burden of polypharmacy in the geriatric population, there arises a global concern towards health outcomes. Due to multiple ailments in elderly, prescribing more than one drug is often practiced but at the same time a physician should exercise increased caution keeping in mind the possibility of adverse drug interactions resulting in toxicity, treatment failure, or loss of drug effect. Hence periodic monitoring and evaluation of patient's drug regimen is needed. Further researches are required to identify the risk of adverse drug effects following multiple drug administration due to drug-drug interactions or other related interactions. Proper understanding of the crosspathy effect on polypharmacy also needs to be studied.

Conclusion

Polypharmacy is the most common scenario in the present era. Geriatric group are more into this practice leading to negative impact on health without proper consultation and increased self medications. Maximum times the information regarding the use of polypharmacy is not shared with the physicians. Hence adverse events and failures in treatment are getting acknowledged irrespective of any medical science.

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