

## “ASSESSMENT OF ROLE OF DIET, LIFE STYLE & STRESS IN THE ETIOPATHOGENESIS OF CONSTIPATION IN GERIATRIC PATIENTS”

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### Abstract:

**Background:** Geriatrics is branch of medicine focusing on health status of elderly people. It mainly deals with prevention and treatment of diseases and debilities in older adults. In ancient system of medicine, ‘Jara’ among eight branches of Ayurveda shows similarity with geriatrics of modern science. In Ayurveda, life span of each individual is divided into three stages with specific predominance of one of three basic humors. Out of three stages old age refers to period after 60-70yrs and having predominance of *vata dosha*. Constipation is common clinical entity reported by elderly patients. It has extensive effect on quality of life. The disease is usually found in elder adults also morbidity and even mortality related with disease have been reported in affected frail elderly. In Ayurveda, Constipation can be correlated with *Vibandha* which is not separately described as disease entity but shows similarity with symptom of *Udavarta vyadhi*. Quality of life (QOL) is mainly influenced by Constipation. Modification in lifestyle is generally accepted and recommended as first-line therapy by health experts. **Objectives:** To study the prevalence of Constipation in the Elderly patients. To study Role of Diet, Life Style & Stress in the etiopathogenesis of Constipation. **Methodology:** This is cross sectional study with randomly selected 75 patients were enrolled in study. Patients were recruited from Sonagaon (Aabaji) one of the adopted villages of DMIMS, DU Sawangi (M) Wardha selected by chit block method. **Result:** Potential confounders such as diet, dietary habits, exercise, Sleep, Stress, associated co-morbidities will be found as risk factors for Constipation. **Conclusion:** Present cross-sectional study will be able to provide reliable data regarding dietary factors, life style factors, mental factors etc. and thereby helps to find out the risk factors for constipation.

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**Keywords:** Constipation, Cross-sectional study, Diet, Etiopathogenesis, Geriatrics, Life style

### Background:

Geriatrics is the branch of medicine which focuses mostly on health of the elderly. It mainly deals with prevention and treatment of diseases and debilities in older adults. <sup>[1]</sup> Our ancient system of medicine Ayurveda has eight branches one of them is ‘Jara’. <sup>[2]</sup> Geriatrics of Modern medicine shows similarity *Jara*. In Ayurveda, life span of each individual (100yrs) is divided into three stages Bal (Child), madhyam (Young) and Vriddha (old age) each having predominance of one of the three basic humor. Old age refers to period after 60-70yrs and having predominance of vata dosha. <sup>[3][4]</sup> In elderly people, Constipation in clinical practice is a frequently reported symptom of the bowel. It impacts extensively on quality of life and health outlays. Even the disease-related morbidity is commonly seen in elderly patients and even mortality has been reported in the vulnerable elderly. <sup>[5]</sup> In Ayurveda, Constipation can be correlated with *Vibandha* which is not described as a separate disease condition but shows similarity with some symptoms of *Udavartavyadhi* (Retention of feces, flatus & urine). <sup>[6]</sup> Untreated or improperly treated Constipation may causes complications like impaction, perforation or death. About 17-40% of elderly patients were affected by chronic functional constipation and also the disease is closely related with quality of life of patients. <sup>[7]</sup> Various factors responsible for the disease include normal aging, type of diet, socioeconomic status, daily behaviours, certain

medications, and decreased mobility, underlying comorbidity etc. Aging is universal process which affects all functions of gastrointestinal system. Awareness of age related physiological changes will helpful to patients & caretakers to manage constipation & other risks. Lifestyle modification is commonly known and recommended as first line treatment by health experts. <sup>[8]</sup> So the research will be carried out to assess the role of diet, lifestyle & stress in constipation etiopathogenesis.

#### **Objectives:**

- To study the prevalence of Constipation in the Elderly patients.
- To study Role of Diet, Life Style & Stress in the Etiopathogenesis of Constipation.

#### **Methods:**

**Study design:** It was a Descriptive Cross sectional study conducted at Sonegaon (Aabaji) village which is adopted village under DMIMS (DU) Sawangi (M), Wardha. The geriatric people were listed from the data of obtained from Grampanchayat of the village. The assessment of diet, lifestyle & stress in Constipation etiopathogenesis is carried out in the participants with the help of a semi-structured questionnaire prepared on the basis of Rome IV constipation criteria. This study protocol was developed as per Standard Protocol format provided by DMIMS (DU) Sawangi (M), Wardha. Ethical approval has been obtained from Institutional Ethical Committee, DMIMS (DU) Sawangi (M), Wardha.

#### **Study Setting:**

The study will be conducted at Sonegaon (Aabaji) one of the adopted village under DMIMS (DU) Sawangi (M), Wardha. The subjects of study will be recruited on the basis of Rome IV Criteria of constipation. In one visit nearly 10 subjects were interviewed randomly. Whole data regarding study were collected in 7-8 visits approximately.

#### **Participants:**

The patients with sign & symptoms of constipation as per given Rome IV Criteria for diagnosis of constipation will be selected for study. Involvement of each participant in the study is voluntary. Recruitment of patients will be done according to eligibility criteria i.e. Inclusion and Exclusion criteria.

#### **Inclusion and Exclusion criteria:**

Elderly patients having age 60 yrs. & above will be selected in study while severely ill and patients not willing participants were excluded from study.

#### **Variables:**

Patients were selected on the basis of Rome IV Criteria for constipation. The criteria must include two include two or more of the following conditions, present from past three month with symptoms starting for at least 6 months earlier to diagnosis. <sup>[9]</sup> The criteria is as follows,

- Straining during defecation for at least 25% of bowel movements
- Hard or lumpy stool in at least 25% of defecation
- Sensation of incomplete evacuation for at least 25% of defecation
- Sensation of anorectal obstruction for at least 25% of defecation
- Manual maneuvers to facilitate at least 25% of defecations
- Fewer than 3 defecations per week
- Loose stools are rarely present without the use of laxatives

The potential confounders like dietary habits, exercise, associated co-morbidities etc. were assessed to find out the risk factor for the constipation.

#### **Data sources/measurement:**

After collection, participants were interviewed using a semi-structured questionnaire and data about the form will be collected of diet, properties of diet, faulty dietary habits, digestive power, addiction if any, exercise, sleep, associated co-morbidity etc. Observed data will be categorised into variables like age, sex, habitat, addiction, type of diet, properties of diet (*Rasa* and *Guna* predominancy), exercise pattern, sleep pattern, stress levels, type of work, daily behaviour etc.

**Bias:** To reduce the bias, village for the study will be selected by chit block method while subjects will be selected by simple random sampling method.

#### **Study size:**

Sample size of study was calculated by the prevalence formula for cross sectional study. <sup>[10]</sup> According to study conducted by Rajput M & Saini S.K prevalence constipation was found 24.8%. <sup>[11]</sup> By using this prevalence rate sample size was calculated as follows,

$$N = 4pq/L^2 = 4 \times 24.8 \times 75.2 / 10^2 = 7459.84/100 = 74.59 = 75.$$

So, considering 24.8% prevalence and 10% allowable error total 75 patients were enrolled in study.

#### **Recruitment:**

People who are interested in participating in the study will be provided with detail information regarding nature of study, purpose, duration and foreseeable effects of study and the role of each participant in this study. If the participants agree with the provided information then semi-structured questionnaire will be completed. Prior to the initial interview, informed written consent from each participant will be obtained. In initial interview general history taking, physical examination of the patient will be done. Diagnosis of the constipation will be done according to Rome IV Criteria for constipation. Participants will be recruited in the study according to inclusion and exclusion criteria.

#### **Baseline assessment:**

Symptoms of constipation, type of diet, properties of diet, faulty dietary habits, digestive power, daily behaviour, sleep pattern, exercise pattern will be assessed at baseline.

#### **Ethical consideration:**

The approval of the research protocol has been obtained from “Institutional Ethical Committee, DMIMS (DU) Sawangi (M), and Wardha”. The reference number of approved research protocol was Ref. No. DMIMS (DU)/IEC/Dec-2019/8566. The details of research protocol will be provided to each participant according to their convenient language in English, Marathi or Hindi. Details regarding nature of study, purpose, duration and foreseeable effects of study and role of each participant in this study will be provided to participants. After providing necessary information to written consent will be obtained from them. Patient may decline to participate in study or can withdraw at any time from the trial, without any penalty or loss of benefits to which he / she is entitled. The questionnaire will be designed according in perspective of investigator & is anonymous. Minimum socio demographic data along with health condition, daily behavior will be collected.

#### **Method of data analysis:**

“Chi square test” will be used to find out the association between potential confounders & to find out relative risk factor for the constipation.

#### **Result:**

At the end of study appropriate results will be drawn from the collected data. Potential confounders such as diet, faulty dietary habits, exercise, sleep, stress, associated co-morbidities will be found as risk factors for constipation in elderly patients.

#### **Discussion:**

Constipation is commonly found gastrointestinal disease. It is a common and challenging complaint for older adults. It became troublesome to many peoples both physically and mentally and also significantly interferes with their daily living and well-being. According a to population based study higher incidence of constipation is found in elderly people. <sup>[12]</sup> Constipation has higher influence on people's quality of life. It is a multifactorial condition which can be caused by genetic predisposition, Socio-economic status, low fiber consumption, inadequate fluid intake, lack of mobility, disturbance of the hormone balance, adverse effects of medicines or body anatomy, etc. In Ayurveda also many diet & life style, stress related factors are given as etiological factor for constipation. Untreated constipation may leads to complications like impaction, perforation or death. Awareness of physiological changes helps the patients & their caretakers to manage the complications of constipation, also life style modification recommended as first-line therapy for constipation. According to Ayurveda *Nidarparivarjan* (avoidance of etiological factors) is the prime treatment to avoid progression of disease. Therefore, present cross-sectional study is designed to assess the dietary factors, life style factors, mental factors etc. and thereby find out the risk factors for constipation. A number of articles on related aspects of this study were reviewed. Aglave et al conducted study on appraisal of core therapy, supportive

therapy, and alternative therapy in a tertiary care rural hospital of vidarbha region in correlation to plethora of menopausal problems<sup>[13]</sup>. Kumar S et al conducted a study on development and validation of a modified frailty risk index as a predictor of mortality in rural elderly people<sup>[14]</sup>. Kumar et al and Papalkar et al reported about some rare cases in elderly<sup>[15-16]</sup>. Gaidhane et al conducted a systematic review on effect of electronic media on diet, exercise, and sexual activity among adolescents<sup>[17]</sup>. Khatib et al studied about Yoga for improving functional capacity, quality of life and cardiovascular outcomes<sup>[18]</sup>. Regmi et al assessed the health of Nepali migrants in India<sup>[19]</sup>. Selokar et al assessed occupational stress among police personnel of Wardha City, India<sup>[20]</sup>. Some Rare case studies in elderly were reported<sup>[21,22]</sup>. Muddey et al assessed the quality of life among rural and urban elderly population of Wardha District<sup>[23]</sup>. Panchbhair studied and addressed the oral health care needs in the dependant elderly in India<sup>[24,25]</sup>.

### Strengths and limitations:

This is the first 'Cross-sectional study' to evaluate etiological factors and risk factors of constipation conducted in village Sonegaon (Aabaji) of Wardha district. Results of this study will provide evidence of related etiological factors and risk factors of constipation from patients of village Sonegaon (Aabaji).

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