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Phone : 2370-1437, 23711437

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# **SOCIAL SECURITY & POLICY ON SENIOR CITIZENS: EVIDENCES FROM ASIAN COUNTRIES**

**Tattwamasi Paltasingh  
Renu Tyagi\***

## **ABSTRACT**

Population ageing seeks equal attention by all the nations across the globe. Older population in different countries is becoming more vulnerable due to lack of adequate support system at macro level as well as diminishing care mechanism in the family. Asian countries are no exception. The paper highlights demographic transitions in different countries of Asian continent with special attention to India. The global trend has been mentioned as a point of reference to understand the implications of the changing scenario concerning the aged. It discusses the different challenges confronted by the elderly which demands better social security. In view of the increasing demand for socio- economic security, the policy measures for senior citizens need to be reviewed. Emphasis has to be concentrated on the need for a well formulated as well as appropriate policy. A major section of the paper is devoted to the policy measures followed at different countries. Some policy recommendation is given at the end for providing improved social security coverage to the older population to let them lead a meaningful and quality life.

**Key words:** Elderly, Social security, Policy measures, Asia, India, Demography

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## INTRODUCTION

Ageing issues have become a challenge because of the growing population trend & changing social structures across the globe. Well-focused policies can contribute in overcoming such challenges. The policies need to consider & fully recognise the contributions made by the senior citizens to the society. Poverty reduction strategies need to be inclusive with greater emphasis on the elderly population. There has to be productive engagement of the senior citizens and ensuring better working conditions for them. Health care policies in many developing nation have mainly focussed on the issues related to maternal and child health as well as general health of the population. There have to be equal importance on the health problems of the elderly whose numbers are growing considerably. Serious efforts are required that can obstruct the current negative trends concerning elder abuse, crime against elderly, discrimination based on age. As per the present situation in most countries, especially in Asian region, the older population do not have access to health care services. Training in geriatric medicine is lagging behind the demand for the elderly care. Worldwide, there is a growing need for long-term care services, which have traditionally been provided by family members but are increasingly being carried out by paid caregivers today. Significant levels of elder abuse and neglect have been reported in both developed and developing countries, cutting across all economic and social strata. There have to be appropriate policies that can encourage the empowerment of the elderly to ensure them a dignified life with full participation. Such issues are discussed in the Madrid Plan of Action, however desired goal is yet to be achieved that requires consolidated & sincere efforts by all stake holders concerned in ageing issues.

The present paper aims at studying the social security & policy measures for senior citizens in the context of Asian Countries. The

first section of the paper highlights demographic trends in different countries as well as in India. The focus of the next section is on various problems & specific situation confronted by the elderly & need for social security. This section elaborates how the older population in different countries is becoming more vulnerable due to lack of support system at macro level as well as dwindling care mechanism in the family. Their vulnerability is found in many areas like finance, health, lack of social network, isolation, crime & related issues. Hence the topic of the next section aims to highlight the need for a well formulated policy that can address the requirement of the elderly. The next section is devoted to the policy measures followed at different countries. The global trend has been mentioned as a point of reference to understand the implications of the changing scenario concerning the aged. There has been attempt to extend a special focus on the situation in India. Two major areas have been captured as part of the policy discussion in India i.e. National Policy on Older Persons 1999, and the draft Policy on Senior citizens, 2011. At the end the paper has been concluded with some suggestions and recommendations.

### Demographic Trend & Implications on Ageing Population:

An alarming increase in the population of elderly requires serious attention all over the globe. These demographic changes have implications on micro and macro social structure of society. In the socio-economic arena, population ageing will have an impact on health and health care, family composition and living arrangements, housing, migration, economic growth, savings, investment and consumption, labour markets, pensions, taxation and intergenerational transfers. United Nations World Assembly on Ageing, recommending research related to ageing (UN 1987) and World Assembly on ageing (UN 2002) adopting the Madrid International Plan of Action on ageing are some major initiatives in this direction. There is a need to examine the implications of population ageing with different profiles for policy development.

The subsequent section has reflected the demographic trend at Global, South Asian & Indian context.

### **Global Demographic Trend:**

Older population in the world, aged 60 years and above is about 760 million (11% of world population) and it is projected to be over 2 billion in 2050 (22% of world population). The world population is projected to increase 3.7 times from 1950 to 2050, but the elderly population will increase nearly 10 times and the “oldest old” (80 and over) population is projected to increase 26 times. The elderly in Asia accounts for more than half of the total (414 million, with 166 million in China and 92 million in India) population. Second largest number of older persons are in European region (about 161 million), followed by Northern America, Latin America & the Caribbean, Africa and Oceania (UN 2011). Globally the share of women in the population increases significantly with age. In 2009, elderly women comprised 54 per cent of the elderly population of 60 years or over, 63 per cent of the population aged 80 years and above, and 81 per cent among centenarians (UN 2009).

Globally, the proportion of older persons has been growing steadily and it is projected to increase due to continuously declining fertility and mortality rates. The number of older population of the less developed countries is increasing rapidly as compared to the developed nations. About 80 per cent of the world's older people will live in less developed countries by 2050 (UN, 2009). There is a progressive greying of population of all the countries irrespective of their development status. Life expectancy rose from 47 years in 1950-1955 to 65 years in 2000-2005 and it is projected to reach 75 years in 2045-2050 globally (UN 2007). A momentous increase in the elderly population can have impact on the socio-economic, medical and psychological well-being of the elderly. Reduced economic opportunities and deteriorating health frequently increase

vulnerability to poverty as people age. About 80 per cent of the world's population are not sufficiently protected in old age against health, disability and income risks. In developing countries about 342 million older persons currently lack adequate income security and this number is projected to be 1.2 billion by 2050, if the current mechanisms coverage is not expanded (UN 2007).

### **Demographic Trend in Asia**

In 1950 Asian region has been accounted for only 44% of the global elderly population and this proportion is projected to rise up to 62% by 2050. There are significant variations in the share of elderly population between different regions of Asia & the leading population trend is noticed in Eastern Asia (11 %) during 2000. China, Singapore, and Korea are currently in the stage of aging societies and these countries are expected to become aged societies before 2020. However, Japan has already become a hyper-aged society with more than 20% of aged of 65 years and above in 2006 (UN 2006). In China the elderly population is projected to increase by 30% of the total population by 2050. The contribution of older persons to the total population of Bangladesh elevated from 4.8 per cent to 5.2 in 2000 which is projected to increase to be over 9 per cent by 2025 and 17 per cent by 2050. The proportion of older persons (6.8 per cent) in Bhutan is the third highest in South Asia and it is projected to exceed 10 per cent in 2025 and 23 per cent by 2050. In India, the second most aged country in South Asia, the share of older person population constitutes more than 7 per cent of the total population. This is projected to increase up to more than 11 per cent by 2025 and to 20 per cent by 2050. The elderly population in Nepal has declined from 6.6 per cent in 1950 to 5.4 per cent in 1985. However, it has increased to 5.9 per cent by the turn of the century and it is projected to continue increasing to reach 7.8 per cent in 2025 and 14 per cent by 2050. Elderly share in total population of Pakistan declined from 8.2 per cent in 1950 to 5.3 per cent in 1985. By the



turn of the century, it had increased later to 6.0 per cent and it is projected to be over 9 per cent by 2025 and to 18 per cent in 2050. The contribution of older persons in Sri Lanka's total population is the highest in South Asia. Proportion of older population increased from 5.5 per cent in 1950 to 9.3 per cent in 2000. It is projected to increase to about 20 per cent in 2025 and 30 per cent by 2050(UN, 2009).

### **Situation in India**

As per census 2001 the proportion of the elderly aged 60 years and above in India was 77 million, more than 7 percent of the total population. Among these more than 70 per cent are illiterate and nearly 90 per cent of them do not have any social security. Fifty five per cent of the older women above 60 years of age group are widows. Elderly population aged 60+ increased from 5.63 percent to about 7.45 percent from 1961 to 2001. Proportion of elderly females has always been higher than that of males both in rural and urban areas and the percentage of elderly people in the rural areas was always found to be higher as compared to that in the urban areas (Census, 2001). The population of 65 years and above is estimated to constitute 5.5 per cent of the total population with a higher proportion of females than males in the 65 above age category (CIA, 2011). India is likely to surpass Chinese population to become the country with the largest population between 2025-2030 (James and Sathyanarayana, 2011). Financial independence is found to be lower among women than men. It is lower in rural elderly than their urban cotemporaries (NSSO 2006). Percentage of the working elderly population is higher in rural India (45%) than the elderly living in urban areas (23%). Significantly higher percent of men (59%) than women (19%) in elderly population contribute to the workforce (CSO, 2011). Increasing feminization of ageing and rapid growth of population of 80 years and above are emerging important issues for ageing research in India. A significant percent of widows (58 percent) as against only 17 percent of widowers were found indicating a greater social and economic vulnerability of elderly

women than elderly men in the country. Work participation in terms of economic contribution of elderly men is declining whereas increasing for elderly women in both rural and urban areas (Yesudian and Singh, 2009).

### **Elderly Issues & Need for Social Security:**

Social security may be defined as the protection that society provides for its members, through a series of public measures, against economic and social distress. Otherwise adverse situation would be caused by the stoppage or substantial reduction of earnings resulting from sickness, maternity, employment injury, unemployment, invalidity, old age and death (ILO, 1942). Countries namely Japan and Singapore only have universal social security for the elderly. In most of the Asian countries pension are restricted to government employees and to small percent of formal, private sector workers. In addition the pension amount seems to be small and insufficient to provide the day-to-day living costs of the older persons (Chen and Jones 1988). An elderly care insurance system was implemented in Japan in 2000 and a chronic care system was implemented in South Korea in 2008 (Mikane et al, 2011). South Asia, together with sub-Saharan Africa, ranks lowest in social security coverage with 5-10 per cent of the economically active population covered by social security schemes (Reynaud 2002). In India, for example, out of an estimated workforce of 397 million, only 28 million employed in the formal sector were covered by social security (India, 2006). The situation is similar in Pakistan where social security schemes in the public and private sectors cover a small proportion of the older population (Mahmood & Nasir 2008). In most countries of the Asian region people involved with agriculture and urban informal sector which constitute majority of the workforce remain without any social security. Extending the social security can be viewed, as a long-term solution for the increasing elderly population. Therefore alternative welfare mechanisms need to be focussed to provide income security for them. Developing social security schemes is the greatest

challenges in Asia.

### **Changing Family Structure:**

Family has always been considered to be the best to provide support and care to the elderly meeting all their socio-economic and emotional needs. About, 92 percent of the elderly in Thailand and the Philippines, 83 percent in China, and 82 percent in Malaysia were living with family during the 1980s. In more developed nation like Japan, 69 percent of the elderly were living with family (World bank, 1994). However with increasing modernization and rapid economic progress, more number of nuclear families are emerging with a simultaneous decline in the joint family system. Elderly in many instances are considered to be a responsibility to the future generation who can share the family income without generating any income. However their rich experience, support and guidance to the younger generation are left unrecognized most of the time. Asian countries have maintained strong family values; with many people living in extended family households either together or close by for their psychological, social and physical needs. In India care of the elderly is considered to be a moral obligation of a family. Respect, love and support to the elderly have been advocated by religious text and scriptures. In addition parents give majority of their income and property to their children in most of Indian societies (Bali 1999). However, the elder care in family is on the decline due to increasing urbanization and increasing participation of women in work force. Traditional family support is likely to shrink due to reduction in family size, increasing nuclearisation of families and increasing migration (De Silva 2005).

Women are the main care givers of the family & toil with the same job till they can manage. Indian society has enjoyed traditional informal support system including joint family, kin and community. Elderly used to be honoured, had legitimate authority in family, decision

making responsibilities and they were treated as repositories of experience and wisdom (Khan 1997). Most of the older persons in India live with their kin (88 per cent), 6 per cent of them live with their spouses due to displacement or migration of their children and only 6 percent of the elderly live alone (Rajan and Kumar 2003). At least 5% of elderly persons in both urban and rural areas live alone (Gol 2006).

### **Socio- Economic Issues:**

Incidence of poverty among the older population is more than the national average (Sri Lanka 2002; World Bank 2006; HAI 2007b). In addition poverty among the older population increases with ageing. Elderly women are more prone to poverty than older men (ECOSOC 1999; ESCAP 2002; Rajan, Perera & Begum 2003; Chakraborti 2004). Main source of income for the elderly population can be identified as personal employment, family transfers, contributory pensions, savings and investment, non-contributory social pensions and others. In most of the developing countries the pension coverage is limited. In developed countries, employment-based contributory pension schemes cover most of the population and those who are not entitled to these pensions are normally supported through non-contributory old-age support schemes. The sustainability of existing pension systems is being questioned in developing and developed countries alike due to various reasons like increased longevity, faulty programme design, mismanagement, insufficient economic growth and inadequate employment-generation. Strategies are increasingly being adopted to increase the effective retirement age. Delayed retirement and staying longer in the workforce can go a long way towards keeping elderly productively engaged. Community-based health insurance schemes exist but less than 20% of Indians have some form of health insurance. In India 36 million people fall below the poverty line each year with reference to healthcare costs (Balaraman et al, 2011). The health care system in India is

confronted with various difficult situations like crisis concerning financial and caregiving issues, lack of professional support etc. There is a need for adequate fund allocation, trained doctors, nurses, paramedical personnel who are sensitised to such issues. There is further need for an integrated approach towards geriatric research in India (Maulik 2009)

### **Policies for Older Persons:**

The rising elderly population & associated socio-economic implication has put paramount pressure on the national as well as international front. Realising the challenges ahead for elderly population, many countries have formulated policy exclusively for their elderly population. This situation continues to prevail despite the fact that elderly have immense contribution to the society in many unique ways. There is a need of more research in this direction. The productive engagement of the elderly population in resource generation and contribution in human resource development need to be considered with importance. Asian and the pacific countries i.e. Australia, Bangladesh, Cambodia, India, Indonesia, Lao People's Democratic Republic, Nepal, Philippines, Thailand and Vietnam; African countries including Ghana, Kenya, Mozambique, South Africa, Uganda, Tanzania, Tunisia; Arab states including Bahrain, Egypt, Jordan, Occupied Palestinian Territory, Oman, Qatar, Saudi Arabia, Syrian Arab Republic; European countries namely Albania, Austria, Cyprus, Czech Republic, Finland, Germany, Hungary, Liechtenstein, Lithuania, Russian Federation, Serbia, Sweden, The former Yugoslav Republic of Macedonia, Turkey and United Kingdom; and countries in Latin America and The Caribbean include Belize, Colombia, Guatemala, Panama, Paraguay, Peru, Trinidad and Tobago and Uruguay (UNPF and HAI 2012).

### **Policies in Asian countries:**

Asian countries have been affected by ageing to varying extents.

Accordingly the respective government responses have varied considerably across countries. India and Sri Lanka being more affected in South East Asia and they have introduced policies for its elderly population while some others like Afghanistan, where the phenomenon is just noticed and not made it as a priority issue, the government has not initiated any action. The Bangladesh Government adopted an inclusive Population Policy including older persons as vulnerable groups (Bangladesh 2004). In 2006, the Government adopted the National Policy on Older People which is to be implemented (HAI 2007a). Despite a high and increasing share of the elderly in Bhutan, the elderly do not have to face problems and they are taken care of by their family possibly an influence of Buddhist philosophy which supports culture of respect, care and compassion (Bhutan, 2002). In addition the National Plan of Action for Gender (2008-2013) includes elderly care programmes in the country. India has given priority to addressing ageing-related issues since soon after its independence in 1947. The Directive Principles of State Policy in Article 41 of the Indian Constitution (propagated in 1950) enjoined upon the state the responsibility of making effective provisions for public assistance in cases of unemployment, old age, sickness, disablement, and in other cases of undeserved want. In 1999, the Government of India adopted the National Policy on Older Persons (NPOP) the Policy recognise that ageing was a national concern and it is aimed at ensuring that the elderly do not live unprotected, ignored or marginalized (India 1999). The National Policy enjoins the State and civil society to extend support for financial security, health care, shelter and other needs of older persons, provide protection against abuse and exploitation and empower them. The population ageing is not a priority issue in Maldives. However, the Government has started identifying older persons important population segment needing special attention, need for further research on their status and to set up quality nursing homes for the elderly (MPF, 2009). Population ageing in Nepal was not considered an issue by the

Government but later the Government adopted the Senior Citizens Policy and Working Policy (Nepal 2002) which guides programmes and projects to serving senior citizens. This Policy covered the economic, social security, health services, facility and honour, participation and engagement, education and entertainment. It also aims to establish a Social Security Fund for its elderly citizens. The Government formulated the Guidelines for Implementation of the Health Service Programme for elderly in 2004 (Nepal 2006). A National Policy for Elderly in Pakistan was formulated in 2004 (Pakistan 2004). The Government also introduced some important facilities for elderly population including free membership to all public libraries, finalization of pension cases without delay and exemption from payment of taxes on recreational activities, separate counters for Senior Citizens at outdoor department of major hospitals, all airport check points and major railway stations. Sri Lanka Government initiated the welfare measures for its elderly population since its independence in 1948 (Sri Lanka 2002). The Government adopted a National Policy and a Plan of Action in 1992 which focused on preparing the population for a productive and fulfilling life in old age. The Government adopted a National Charter and National Policy for Senior Citizens in 2006.

### **Policies in India for senior citizens:**

In India the National Policy for Older Persons (NPOP) was introduced in January 1999 by Government of India with an objective to ensure the benefit to the older persons. The policy covered the financial, housing, education and other related issues for social security of the elderly population. National Old Age Pension Scheme (NOAPS) covered by the National Social Assistance Scheme under this policy was introduced in 1995. The NPOP provides for 10 percent of the housing sites in urban as well as rural areas for older persons belonging to the lower income groups, special consideration to the older persons falling in the category of Below Poverty Line (BPL) and destitute in housing

schemes, loans at reasonable interest rates and easy repayment instalments with tax relief for purchase of houses etc however, the existence of health care facilities to the elderly in more generic manner without much need-based component for the older population in the NPOP 1999 is critiqued (Bali, 2010). The NPOP is revised as draft policy i.e. National Policy for Senior Citizens (NPSC-2011) considering high percentage of lonely elderly, the special need of oldest old and older women and privatization of health services. In the NPSC-2011, the old age pension scheme has proposed to cover all senior citizens living below the poverty line with increased amount of Old age pension. The "oldest old" would be covered under Indira Gandhi National Old Age Pension Scheme (IGNOAPS). Public Distribution System would reach out to cover all senior citizens living below the poverty line. In NPSC-2011, the goal of the healthcare needs of senior citizens aims to be good, affordable health service, heavily subsidized for the poor and a graded system of user charges for others. The current National Programme for Health Care of the Elderly (NPHCE) would be expanded immediately and, in partnership with civil society organizations, scaled up to all districts of the country.. Besides these the draft policy, NPSC-2011, envisions creating an age friendly, barrier-free access in buses and bus stations, railways and railway stations, airports and bus transportation within the airports, banks, hospitals, parks, cinema halls, shopping malls and other public places that senior citizens and the disabled visit. The NPSC-2011 proposes creation of a 'Welfare fund' for senior citizens by the government and revenue generated through a social security cess. The NPSC- 2011 proposes for stringent punishment for elder abuse and crime against them. Various initiative by the Government of India like National Policy on Older person (NPOP), Old age pension for the destitute elderly (NOAPS) and support to other benefits for the elderly like Annapurna programme, old age homes, day care centres, travel discounts, income tax rebates, etc. have been questioned several times due to the poor awareness about such benefits among elderly and their improper and

inadequate coverage. The draft policy for senior citizens (NPSC 2011) has envisioned the elderly requirement however; its finalisation and effective implementation is awaited (Paltasingh and Tyagi, 2012). There is an increasing need for social security among the older people especially in the women. The deserted and destitute women as well as the widows are the most vulnerable group among the elderly people. Hence the need for social security is more intense and essential among them (Gopal, 2006).

### **RECOMMENDATION & CONCLUSION:**

Most of the countries in Asia are facing the dual challenge of a rapidly greying population & inadequate social security coverage due to limited financial resources. Considering the growing trend of elderly population & its serious implications, it has become clear that the government alone cannot tackle the problem on its own. There has to be schemes that can assist voluntary organization, welfare associations and community to help the senior citizens with sincerity and commitment. The challenges of ageing population in Asian countries can be handled by different stake holders like government, civil society, academicians and others who are concerned about such issues. One has to realize that older & younger generations are inter-dependent on each other. In view of the varied diseases and disabilities affecting the elderly as well as their life style patterns, the social support in health services need to be more equipped in terms of infrastructure and human resource training to address the special health needs of the elderly. The elderly can have provision for barrier free accessibility and mobility to places of their choice, community centers, clubs, shopping centers and parks etc. Welfare programs can be oriented to make special provisions for the older population who are poor, lack family support, disabled and chronically ill. NGOs and CBOs can be encouraged to provide the social support to care of older population through setting of more number of daycare centers providing aids and appliances to disabled people and reach out services at the time of necessity. The support services can strengthen the family ties and remove the

generation gap. The elderly people could be provided with helpline services round the clock across different geographical locations irrespective of their caste, class and gender background. Benefits to the elderly across different countries have been questioned several times due to poor awareness about such benefits among elderly, small budget, inappropriate identification of beneficiaries, restricted accessibility, difficult procedures, and irregular payment etc. As elderly constitutes a heterogeneous group, one single policy may not be able to address the issues concerning the entire elderly population. The policies may be framed that can help in addressing the context specific issues of a diverse elderly population from different socio-cultural background. The issues concerning Asian elderly need to be handled in positive and collaborative manner through exchange of ideas, information & experiences from different countries. Such exchange need to be carried out through sub-regional, regional and interregional activities. Gathering data and information for the elderly can to be oriented to identify their needs and problems at the national and international level. In most of the Asian countries, foundation has already being laid to meet the challenges arising with the population ageing through the existing institutional structures. However, there is need to equip the citizens with more awareness and better strengthening on population ageing.

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# DIET IN THE ELDERLY: AN AYURVEDIC PERSPECTIVE

Badal Jana\*

## ABSTRACT

Nutrition and dietetic concept in Ayurveda is very vast. Goal of nutritional care in the elderly to achieve a healthy, purposeful, and independent living as well as quality of life. Eat to live and eat to live long and healthfully through *bhojan*(wholesome), *mitabhojan* (balance), and *kalabhojan* ( in proper time) is the philosophy of Ayurvedic nutrition. Ayurveda gives maximum emphasis to digestion than nutrition that is why a very deep and elaborated description of agni, matra , and ama found in Ayurvedic texts. Diet for the elderly should be soft well cooked, liberal amount of fresh fruits, milk and milk products. Six major systems are identifiably affected in aging so, special attention towards diet should be given to cardio vascular brain and mental function, renal status, metabolic disease , and immunity. Moderation, balance, variety are three golden rules of diet in the elderly.

**Key words:** Saatvik Ahara , Sadaras, Agni , Bala, Medhya Rasayana , Ojas

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\* Professor of Rognidan, Institute of Post Graduate Ayurvedic Education and Research, Govt. of West Bengal, Kolkata – 700 009,



## INTRODUCTION

Diet and nutrition concept in Ayurveda is very vast and scientific. Eat to live and eat to live long and healthfully is the philosophy of Ayurvedic nutrition. Trio of each Ayurvedic Prescription comprises of *ausadha*/ medicaments, *Anna*/do's and don't of diet, and *vihara*/ life style. Due to changes in different body systems, mind, metabolism, decreased mobility, poor income diets of elderly needs some modification. So, diet after 60 years should be nutritionally adequate and well Balance. The food for the elderly should be soft, well cooked, liberal amount of fresh fruits, Vegetables, milk and milk products, complex carbohydrates, and water should be given.

High protein and fatty foods need to be reduced. In one word *saatvik* diet is the diet for the elderly. Practice of dietary restriction and yoga therapy throughout life is the key of longevity and quality of life in the ancient *Rishis*.

### Concept of Diet in Ayurveda

There are three objectives of diet- (1) Low risk of disease and disease related disability, (2) high mental and physical function, and (3) active engagement of life. Diet is the science of feeding people according to their requirement. Ayurveda deals with the diet very broadly. All the classical texts of Ayurveda such as *Charak samhita*, *Susruta samhita*, *Aastanga samgraha*, and *Astanga Hridaya* deal exclusive chapters on nourishment and nutrition values of food, balance diet, daily diet, seasonal diet, disease wise diet, diet during pregnancy, lactation and menstruation, grouping of diet and drinks, incompatible diet rules and a list of most unwholesome and wholesome food. *Susruta* clearly mentioned that diet is the primary source of *Bala* (strength), *Varna*(complexion), and *Ojas* (Immunity)<sup>1</sup>.

In this context concept of *Charak* is noteworthy. The life of living beings is food, and all the people of the world seek food.

Complexion, clarity, good voice, strength, understanding, happiness, satisfaction, nourishment, are all established in food. Whatever is beneficial for happiness, whatever pertains to the Vedic sacrifices, and whatever is established to spiritual salvations said to be established in food.<sup>2</sup> There are four tools or *pramanas* to solve any problems in Ayurveda, they are *Aptapadesh* (textual references), *pratakshya* (perception or direction observation), *Anuman* (inference), and *Yukti*(reasoning). The goal of Ayurveda relating to diet after sixty include (a) the diet that will not produce *ama* (mid metabolic arrest) (b) promotion of proper excretions in proper time, (c) production of energy at the end of digestion (d) the diet protect *Jatharagni* and promote *dhatagni* to ensure perfect transformation of *dhatu*s / tissues. Thus lower risk of disease, good physical and mental performance and overall improvement of quality of life.

### Minimal Difference between Food and Medicine as per Ayurveda

Ayurveda gives equal importance to food and medicine. The quality and action of food and medicine are govern by common five principles i.e, *Rasa*(tastes), *Guna* (properties), *Vipak*( post digestive action), *Virya* (potency), and *Prabhava* (specific action). The food produce its effect *rasa* and *guna* on the other hand the medicine largely acts through *vipak*, *virya*, and *prabhava*.

### The Recognized Six Tastes / Sada Rasa

Ayurveda clearly mentioned six tastes must be present in every meal for balance of three bio energetic factors and also nourishes the body. For maximum health and vitality the ideal diet is one that our *doshas*.

**Sweet taste (madhur rasa)** – Carbohydrates, amino acids, fat, and sugar Its main function is anabolic, build tissues, calms nerves, promotes general strength. Fruits, grains, ghee, milk are the common sources of sweet tastes. Excess intake madhura rasa substance leads to development of overweight, obesity, diabetes, and neoplasm.

**Sour taste (Amla rasa)**—cleanses tissue, increases absorption of mineral, gives satisfaction to the heart. Common sources are sour fruits, yogurt, and fermented food.

**Salty taste (Lavana rasa)** : Improve taste to food lubricate tissue and stimulate digestion. It is anabolic. Too much salt intake causes edema, premature hair fall and hair loss. Ayurveda mention different types of salts like saindhava lavana, or rock salts ,samudra lavana, bida lavana , or a kind of rock salts which contain sulphar, ammonium, and potassium.

**Bitter taste (Tikta rasa)**: It is catabolic, detoxifies tissues, lighten tissues, destroy worms. It causes purification of blood, and antipyretic. Common foods are neema, turmeric, karabellak, coriander, bramhi.

**Pungent tastes (Katu rasa)**: Promotes digestion and assimilation of food, induces secretion from nose and eyes. Promotes functions of senses. The chief chemical vehicles of this taste are the essential oils. Common sources are Maricha or black pepper, long piper or pippali, hingu, garlic, palamdu or onion, tulsi or holy basil, and nut meg.

**Astringent taste (Kshaya rasa)**: It helps in absorption of body fluids, tighten tissues, reduces secretion and oedema, promotes union. Common sources are raw fruits and vegetables, legumes, unripe bael fruit , honey, fig.

## Balanced diet in Ayurveda

Ayurvedic balanced diet is one that not only nourishes the body, but also restores balanced of tridosha, which is very much essential for maintaining health, and mental upliftment. The constituents of a well balanced diet includes good and fine sastik and Sali rice (carbohydrate food), Mudga/ green gram (plant protein), saindhava /rock salts, Amalaki (vitamin-c), yaba/barley (carbohydrate), Milk (containing protein, fat, carbohydrate, fat, mineral , vitamin), sarpi /ghrita (fat), Jangala mamsa /flesh of animals living in dry forest (animal protein), honey and Jala/ sterile water.

## Importance of Agni (digestion and metabolism)

Diet and nutrition concepts will be incomplete with the concept of agni. The agent or agents present in the GI (Gastrointestinal) tract or tissue level which converts the heterogeneous substance to homogenous one is known as Agni. It is of three types— Pachakagni, Bhutvagni, and Dhatvagni. Pachakagni plays a central role in digestion of food and resides in the Jathara (whole of the mid gut) hence it is also called Jatharagni. In addition to its main function of digestion, with the help of samana vayu , it retains the food in the intestines in intestine for sufficient period for digestion and assimilation. It also absorbs the end product of digestion (Rasa) into the body and expels the Waste materials to the large intestine. The Pachakagni may be correlated with the various digestive juices and local hormones of the GI tract. Ayurvedic system gives maximum emphasis to digestion.

On the other hand western system of Medicine gives importance to nutrition. So, Agni is one word is nothing but transforming agent present in the GI. tract.

## Diet concept for older people's health

A healthy diet and life style can help in prevention of diseases, particularly chronic diseases. Changes in appetite and energy in

take regulation, numerous pathologic and age related change physiologic changes contribute to the difficulty older people have maintaining , a balance between metabolic needs and nutrient intake, pathophysiological changes that lead to loss of taste, smell and appetite with advancing age also. Psychological and socio-economic factors also the contributing factors for poor nutrition in elderly after 60 years of age. Maintenance of stable weight is requires a steady balance between nutrient intake and energy expenditure. With advancing age, the metabolic, neural, and hormonal pathway that normally maintain this delicate balance by regulating appetite and hunger begin to lose their compensatory responsiveness to change in energy demands.

### **Six Major Systems are identifiably affected in Aging**

Differentiating the consequences of normal aging from diseases and disuse is the fundamental in practice of elderly medicine. Cardiovascular health, Brain and Mind function, Musculo skeletal health, Endocrine function, Immune function, Homeostenosis particularly glucose homeostenosis are identifiably affected in old age. So, for health benefits proper attention should be given relating to diet on those six areas.

### **Diet for cardiovascular health in Ayurveda**

After the age of 60 years people are greater risk of Cardiovascular disease such as hypertension, atherosclerosis of coronary, carotid, and peripheral vascular disorders. 40 % of deaths over 65 are caused by coronary heart disease or stoke. Restriction of salt intake, overly salted food, diet rich in cholesterol, saturated and trans fatty acids is an Important component of dietary advice in the elderly as per western medicine. Ayurveda explains that four drug or dietary principles can be applied for protection of cardiovascular system in advance age such as (a) Hridya ,(b) Ojasa ,(c) Srotosodhana, (d) Manoprasadan. Milk and milk products, Tulsi, Amalaki, fruits like

Pomegranate, apple, seasonal vegetables, are good for the heart. Fruits that are most beneficial for keeping the heart healthy are oranges, papaya, grapefruits. Garlic is beneficial for blood Pressure.

### **Diet for Brain and Mind Function**

The brain is the among the most metabolically active organs in the Body and generates large quantities of free radicals. Brain need four basic nourishment i.e. oxygen, glucose, fat, and protein. Medhya rasayana, vayasthapana, Balya, Jeevaniya ahara or ousadha is beneficial for brain and mind. Fresh fruits, and vegetables, black pepper enhance oxygenation of brain, whole grain is the source of glucose. Fruits like nuts specially walnuts and pure cow's ghee in balanced amount, turmeric and amalaki is good for brain. Use of protein food such as milk, yogurt, soyabin stimulate brain activity. Cognitive impairment with dementia is common in elderly persons causes significant impairment in capacity to perform activity daily, so, intellectual stimulation activity like reading, writing, cross word puzzles, group discussion and music are also helpful along with diet. Ayurveda mentioned yoga, meditation and meditation too much effective for mental performance and promote intelligence.

### **Diet for Musculo skeletal Health**

In old age three significant changes are observed they are sarcopenia, (reduction of muscle mass causes disability), osteoporosis, and arthritis especially degenerative arthritis along with soft tissue rheumatism. So, daily physical activity associated with grains, vegetables, fruits, oils, dairy products, meat, fish, and beans should be consumed regularly, to strengthen the musculoskeletal health.

### **Diet for Endocrine Function in Ayurveda**

Endocrine glands are related to metabolism, immune function,

bone density, energy level, sexual desire, and brain function. For healthy functioning of endocrines Ayurvedic texts mentioned vrishya and vajikaran diets and adjuvants. Sastic variety of rice, milk and milk products, kharjur, pure cow's ghee, mamsa rasa, Rohita and puti fishes, Dadimba and amlaki. Garlic and onion will aid in keeping a balanced endocrine system.

### **Diet for Immune Function in Ayurveda**

The functional capacity of the immune system decline with involution of the thymus gland and deterioration of stem cells leading to increase in the incidence of infection, cancer and other immune mediated diseases in the elderly. Immunology in Ayurveda is explained in terms of Bala, Ojas, Vyadhi kshamatva, Vyautpadak prativandhaktva. There are specific diets and medicinal plants that act immune function include whole grains, milk and milk products, meat, soup, fresh seasonal fruits, some kitchen spices like garlic, ginger, cinnamon, turmeric.

### **Diet for Diabetes in Ayurveda**

Ayurveda prescribes that patients with madhumeha reduce or avoid sweet and heavy foods, diabetic patients favour food with bitter, pungent, and astringent tastes (in vipaka). The addition to the diet of specific fruits, vegetables, and spices. Bitter gourd, black berry, garlic, onion, cinnamon are the special diet for diabetes. Rasayana vis- a-vis antioxidant or free radical scavengers supplements in the elderly may enhance defense against free radical damage in diabetic patients.

## **SUMMARY**

Adequate nutrition and a well balanced diet is very vital in old age to prevent and control the common hazards after the age of 60 years. After the age of 60 there are many metabolic and physiological changes which impact on nutritional needs of the individual. Factors contributing to inadequate nutrition in older adult includes (a). physiologic (impaired strength, impaired sensory input, mal absorption, chronic illness and effect of drugs), (b) Socio-economic (fixed income, social isolation, inadequate cooking facilities, and poor knowledge of nutrition), (c) Psychological (depression, anxiety, fear, dementia). Special consideration should be given to appetite, cardiac status, renal status, and use of medications. Small quantity of food, in fixed time intervals, variety of food should be chosen. Sattvik food comprises of fresh fruits, vegetables, milk products, nuts, minimum fats and spices should be recommended after the age of 60 years. Older people are at greater risk of dehydration because of impaired thirst sensation, less effective hormonal responses, to hyper tonicity, co-existing physical or cognitive impairments, and voluntary fluid restriction in an attempt to control urinary incontinence. So, elderly people should encourage drinking of water to maintain adequate hydration, normal fecal and urinary output. Three guide posts of diet after 60 in Ayurveda consisting of variety, balance, and moderation, special attention should be given to avoid ama (toxic and antigenic food generating diet).

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## **PATTERN OF UROGENITAL DISEASES IN ELDERLY MALES AND FEMALES**

**Esha Chakravarty \***  
**Suman Kumar Roy\***

### **ABSTRACT**

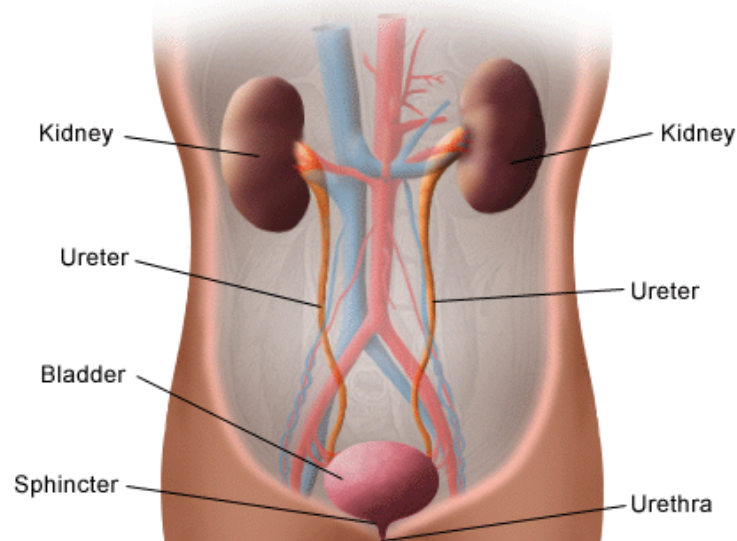
Diseases of the urogenital system are a major issue of concern and the number of people falling prey to diseases of this kind is slowly on the rise. Elderly people are more predisposed to urogenital disorders and get afflicted easily. Males and females both suffer from urogenital disorders of varied types but kidney stones, Benign Prostate Hyperplasia(BPH), Urinary Incontinence, Urinary Tract Infection(UTI) and Uterine Prolapse are more common. Of the 60 patients chosen and interviewed from hospitals and clinics, the percentage distribution of the individual diseases in males and females are calculated separately. Kidney disorders share the highest percentage in males followed by a significant claim of BPH. A much smaller percentage is seen to suffer from UTI and incontinence. The trend is reverse in females with UTI taking the highest share of percentage followed by incontinence. In the comparative study where each disease is taken up and compared individually between males and females it is seen that UTI and incontinence are much higher in females but kidney stones are occurring more in males. At the same time the male reproductive system disorder BPH is much more prevalent than the female reproductive system disorder uterine prolapse.

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*\*Faculty CMIG*

## INTRODUCTION

Front View of Urinary Tract



Urology is the branch of medicine concerned with the urinary tract in both genders, and with the genital tract or reproductive system in the male. *Urogenital* is a word that refers to the urinary and genital organs.

The most serious and debilitating of benign kidney and urinary tract diseases includes end-stage renal disease (ESRD); kidney stone disease; urinary incontinence; benign prostatic hyperplasia (BPH); interstitial cystitis; urinary tract infection; and polycystic kidney disease.

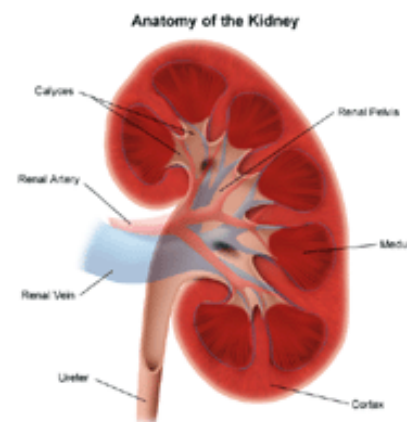
Other diseases also have a tremendous impact on the disability and death associated with kidney and urologic diseases, including diabetes and hypertension.

The body takes nutrients from food and converts them to energy.

After the body has taken the food components that it needs, waste products are left behind in the bowel and in the blood.

The kidney and urinary systems help the body to eliminate liquid waste called urea, and to keep chemicals, such as potassium and sodium, and water in balance. Urea is produced when foods containing protein, such as meat, poultry, and certain vegetables, are broken down in the body. Urea is carried in the bloodstream to the kidneys, where it is removed along with water and other wastes in the form of urine.

Other important functions of the kidneys include blood pressure regulation and the production of erythropoietin, which controls red blood cell production in the bone marrow. Kidneys also regulate the acid-base balance and conserve fluids.



## Kidney and urinary system parts

**Two kidneys.** This pair of purplish-brown organs is located below the ribs toward the middle of the back. Their function is to remove liquid waste from the blood in the form of urine; keep a stable balance of salts and other substances in the blood; and produce erythropoietin, a hormone that aids the formation of red blood cells. The kidneys remove urea from the blood through tiny filtering units

called nephrons. Each nephron consists of a ball formed of small blood capillaries, called a glomerulus, and a small tube called a renal tubule. Urea, together with water and other waste substances, forms the urine as it passes through the nephrons and down the renal tubules of the kidney.

**Two ureters.** These narrow tubes carry urine from the kidneys to the bladder. Muscles in the ureter walls continually tighten and relax forcing urine downward, away from the kidneys. If urine backs up, or is allowed to stand still, a kidney infection can develop. About every 10 to 15 seconds, small amounts of urine are emptied into the bladder from the ureters.

**Bladder.** This triangle-shaped, hollow organ is located in the lower abdomen. It is held in place by ligaments that are attached to other organs and the pelvic bones. The bladder's walls relax and expand to store urine, and contract and flatten to empty urine through the urethra. The typical healthy adult bladder can store up to two cups of urine for two to five hours.

**Two sphincter muscles.** These circular muscles help keep urine from leaking by closing tightly like a rubber band around the opening of the bladder.

**Nerves in the bladder.** The nerves alert a person when it is time to urinate, or empty the bladder.

**Urethra.** This tube allows urine to pass outside the body. The brain signals the bladder muscles to tighten, which squeezes urine out of the bladder. At the same time, the brain signals the sphincter muscles to relax to let urine exit the bladder through the urethra. When all the signals occur in the correct order, normal urination

## Facts about urine

Adults pass about a quart and a half of urine each day, depending on the fluids and foods consumed.

The volume of urine formed at night is about half that formed in the daytime.

Normal urine is sterile. It contains fluids, salts and waste products, but it is free of bacteria, viruses and fungi.

The tissues of the bladder are isolated from urine and toxic substances by a coating that discourages bacteria from attaching and growing on the bladder wall.

## Urogenital Disorders

Many disorders of the urinary system require clinical care by a physician or other health care professional. Listed in the directory below are some of the conditions, for which we have provided a brief overview.

### Overview of Urinary/Urogenital System Disorders

Bladder Cancer

Cystocele (Fallen Bladder)

Hematuria (Blood in the Urine)

Impotence / Erectile Dysfunction

Interstitial Cystitis

Male Factor Infertility

Neurogenic Bladder

Peyronie's Disease

Prostate Disease

Benign Prostatic Hyperplasia (BPH)

Prostate Cancer



Urinary Incontinence

Urinary Tract Infection

Vesicoureteral Reflux

### **What causes problems in the urinary system**

Problems in the urinary system may include conditions such as kidney failure, urinary tract infections, kidney stones, prostate enlargement, and bladder control problems. These problems in the urinary system may be caused by the following:

#### **Aging**

As we age, changes in the structure of the kidneys can cause them to lose some ability to remove wastes from the blood, and the muscles in the ureters, bladder, and urethra tend to lose some of their strength.

Urinary infections may occur because the bladder muscles do not tighten enough to empty the bladder completely. A decrease in strength of muscles of the sphincters and the pelvis, that may be associated with age, can also cause incontinence.

#### **Illness or injury**

Damage to the kidneys caused by illness or an injury can also prevent them from filtering the blood completely or block the passage of urine.

### **What are the symptoms of a kidney and/or urinary tract disease?**

The following are the most common symptoms of a kidney and/or urinary tract disease. However, each individual may experience symptoms differently. Symptoms may include:

- frequent headaches
- fatigue
- itchiness all over the body
- burning or difficulty during urination
- frequent urination, particularly at night
- infrequent urination
- blood in the urine
- loss of appetite
- nausea and/or vomiting
- puffiness around eyes and/or swelling of hands and feet
- skin may darken
- muscle cramps or pain in small of back just below the ribs  
(not aggravated by movement)
- high blood pressure

The symptoms of a kidney and/or urinary tract disease may resemble other conditions or medical problems. Always consult your physician for a diagnosis.

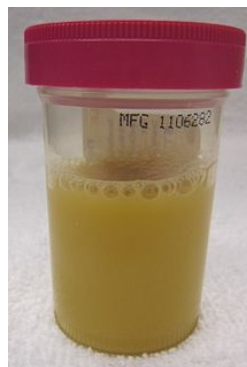
## URINARY TRACT INFECTION

A **urinary tract infection (UTI)** is a bacterial infection that affects part of the urinary tract. When it affects the lower urinary tract it is known as a simple cystitis (a bladder infection) and when it affects the upper urinary tract it is known as pyelonephritis (a kidney infection). Symptoms from a lower urinary tract include painful urination and either frequent urination or urge to urinate (or both), while those of pyelonephritis include fever and flank pain in addition to the symptoms of a lower UTI. In the elderly and the very young, symptoms may be vague or non specific. The main causal agent of both types is *Escherichia coli*, however other bacteria, viruses or fungi may rarely be the cause.

Urinary tract infections occur more commonly in women than men, with half of women having at least one infection at some point in their lives. Recurrences are common. Risk factors include female anatomy, sexual intercourse and family history. Pyelonephritis, if it occurs, usually follows a bladder infection but may also result from a blood borne infection. Diagnosis in young healthy women can be based on symptoms alone. In those with vague symptoms, diagnosis can be difficult because bacteria may be present without there being an infection. In complicated cases or if treatment has failed, a urine culture may be useful. In those with frequent infections, low dose antibiotics may be taken as a preventative measure.

In uncomplicated cases, urinary tract infections are easily treated with a short course of antibiotics, although resistance to many of the antibiotics used to treat this condition is increasing. In complicated cases, longer course or intravenous antibiotics may be needed, and if symptoms have not improved in two or three days, further diagnostic testing is needed. In women, urinary tract infections are the most common form of bacterial infection with 10% developing urinary tract infections yearly.

## Signs and symptoms



Urine may contain pus (a condition known as pyuria) as seen from a person with sepsis due to a urinary tract infection.

Lower urinary tract infection is also referred to as a bladder infection. The most common symptoms are burning with urination and having to urinate frequently (or an urge to urinate) in the absence of vaginal discharge and significant pain. These symptoms may vary from mild to severe[2] and in healthy women last an average of six days. Some pain above the pubic bone or in the lower back may be present. People experiencing an upper urinary tract infection, or pyelonephritis, may experience flank pain, fever, or nausea and vomiting in addition to the classic symptoms of a lower urinary tract infection.[2] Rarely the urine may appear bloody or contain visible pyuria (pus in the urine).[5]

## In the elderly

Urinary tract symptoms are frequently lacking in the elderly. The presentations may be vague with incontinence, a change in mental status, or fatigue as the only symptoms. While some present to a health care provider with sepsis, an infection of the blood, as the first symptoms.[ Diagnosis can be complicated by the fact that many elderly people have preexisting incontinence or dementia.

## Cause

*E. coli* is the cause of 80–85% of urinary tract infections, with *Staphylococcus saprophyticus* being the cause in 5–10%. Rarely they may be due to viral or fungal infections. Other bacterial causes include: *Klebsiella*, *Proteus*, *Pseudomonas*, and *Enterobacter*. These are uncommon and typically related to abnormalities of the urinary system or urinary catheterization. Urinary tract infections due to *Staphylococcus aureus* typically occurs secondary to blood born infections.

## Sex

In young sexually active women, sexual activity is the cause of 75–90% of bladder infections, with the risk of infection related to the frequency of sex. The term "honeymoon cystitis" has been applied to this phenomenon of frequent UTIs during early marriage. In post-menopausal women, sexual activity does not affect the risk of developing a UTI. Spermicide use, independent of sexual frequency, increases the risk of UTIs.

Women are more prone to UTIs than men because, in females, the urethra is much shorter and closer to the anus. As a woman's estrogen levels decrease with menopause, her risk of urinary tract infections increases due to the loss of protective vaginal flora.

## Urinary catheters

Urinary catheterization increases the risk for urinary tract infections. The risk of bacteriuria (bacteria in the urine) is between three to six percent per day and prophylactic antibiotics are not effective in decreasing symptomatic infections. The risk of an associated infection can be decreased by catheterizing only when necessary, using aseptic technique for insertion, and maintaining unobstructed closed drainage of the catheter.

## Others

A predisposition for bladder infections may run in families. Other risk factors include diabetes, being uncircumcised, and having a large prostate. Complicating factors are rather vague and include predisposing anatomic, functional, or metabolic abnormalities. A complicated UTI is more difficult to treat and usually requires more aggressive evaluation, treatment and follow-up. In children UTIs are associated with vesicoureteral reflux (an abnormal movement of urine from the bladder into ureters or kidneys) and constipation.

Persons with spinal cord injury are at increased risk for urinary tract infection in part because of chronic use of catheter, and in part because of voiding dysfunction. It is the most common cause of infection in this population, as well as the most common cause of hospitalization. Additionally, use of cranberry juice or cranberry supplement appears to be ineffective in prevention and treatment in this population.

## Pathogenesis

The bacteria that cause urinary tract infections typically enter the bladder via the urethra. However, infection may also occur via the blood or lymph. It is believed that the bacteria are usually transmitted to the urethra from the bowel, with females at greater risk due to their anatomy. After gaining entry to the bladder, *E. Coli* are able to attach to the bladder wall and form a biofilm that resists the body's immune response.

## Prevention

A number of measures have not been confirmed to affect UTI frequency including: the use of birth control pills or condoms, urinating immediately after intercourse, the type of underwear used, personal hygiene methods used after urinating or defecating, or whether a person typically bathes or showers. There is similarly a

lack of evidence surrounding the effect of holding one's urine, tampon use, and douching.

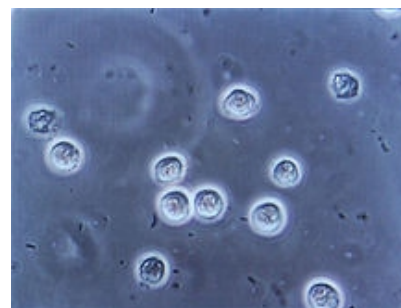
In those with frequent urinary tract infections who use spermicide or a diaphragm as a method of contraception, they are advised to use alternative methods. Cranberry (juice or capsules) may decrease the incidence in those with frequent infections, but long-term tolerance is an issue with gastrointestinal upset occurring in more than 30%. Twice daily use may be superior to once daily use. As of 2011, intravaginal probiotics require further study to determine if they are beneficial. Condom use without spermicide or use of birth control pills does not increase the risk of uncomplicated uninfected tract infection.

## Medications

For those with recurrent infections, a prolonged course of daily antibiotics is effective. Medications frequently used include nitrofurantoin and trimethoprim/sulfamethoxazole.

Methenamine is another agent frequently used for this purpose as in the bladder where the acidity is low it produces formaldehyde to which resistance does not develop. In cases where infections are related to intercourse, taking antibiotics afterwards may be useful. In post-menopausal women, topical vaginal estrogen has been found to reduce recurrence. As opposed to topical creams, the use of vaginal estrogen from pessaries has not been as useful as low dose antibiotics. A number of vaccines are in development as of 2011.

## Diagnosis



Multiple bacilli (rod-shaped bacteria, here shown as black and bean-shaped) shown between white blood cells in urinary microscopy. These changes are indicative of a urinary tract infection.

In straightforward cases, a diagnosis may be made and treatment given based on symptoms alone without further laboratory confirmation. In complicated or questionable cases, it may be useful to confirm the diagnosis via urinalysis, looking for the presence of urinary nitrites, white blood cells (leukocytes), or leukocyte esterase. Another test, urine microscopy, looks for the presence of red blood cells, white blood cells, or bacteria. Urine culture is deemed positive if it shows a bacterial colony count of greater than or equal to  $10^3$  colony-forming units per mL of a typical urinary tract organism. Antibiotic sensitivity can also be tested with these cultures, making them useful in the selection of antibiotic treatment. However, women with negative cultures may still improve with antibiotic treatment. As symptoms can be vague and without reliable tests for urinary tract infections, diagnosis can be difficult in the elderly.

## Classification

A urinary tract infection may involve only the lower urinary tract, in which case it is known as a bladder infection. Alternatively, it may involve the upper urinary tract, in which case it is known as pyelonephritis. If the urine contains significant bacteria but there are no symptoms, the condition is known as asymptomatic bacteriuria. If a urinary tract infection involves the upper tract, and the person has diabetes mellitus, is pregnant, is male,

or immunocompromised, it is considered complicated. Otherwise if a woman is healthy and premenopausal it is considered uncomplicated. In children when a urinary tract infection is associated with a fever, it is deemed to be an upper urinary tract infection.

## Epidemiology

Urinary tract infections are the most frequent bacterial infection in women. They occur most frequently between the ages of 16 and 35 years, with 10% of women getting an infection yearly and 60% having an infection at some point in their lives. Recurrences are common, with nearly half of people getting a second infection within a year. Urinary tract infections occur four times more frequently in females than males.[4] Pyelonephritis occurs between 20–30 times less frequently. They are the most common cause of hospital acquired infections accounting for approximately 40%. Rates of asymptomatic bacteria in the urine increase with age from two to seven percent in women of child bearing age to as high as 50% in elderly women in care homes. Rates of asymptomatic bacteria in the urine among men over 75 are between 7-10%.

Urinary tract infections may affect 10% of people during childhood. Among children urinary tract infections are the most common in uncircumcised males less than three months of age, followed by females less than one year. Estimates of frequency among children however vary widely. In a group of children with a fever, ranging in age between birth and two years, two to 20% were diagnosed with a UTI.

## Enlarged Prostate: A Complex Problem

### Enlarged Prostate Symptoms and Causes

In men, urine flows from the bladder through the urethra. BPH is a benign (noncancerous) enlargement of the prostate that blocks the flow of urine through the urethra. The prostate cells gradually multiply, creating an enlargement that puts pressure on the urethra -

- the "chute" through which urine and semen exit the body.

As the urethra narrows, the bladder has to contract more forcefully to push urine through the body.

Over time, the bladder muscle may gradually become stronger, thicker, and overly sensitive; it begins to contract even when it contains small amounts of urine, causing a need to urinate frequently. Eventually, the bladder muscle cannot overcome the effect of the narrowed urethra so urine remains in the bladder and it is not completely emptied.

Symptoms of enlarged prostate can include:

- A weak or slow urinary stream
- A feeling of incomplete bladder emptying
- Difficulty starting urination
- Frequent urination
- Urgency to urinate
- Getting up frequently at night to urinate
- A urinary stream that starts and stops
- Straining to urinate
- Continued dribbling of urine
- Returning to urinate again minutes after finishing

When the bladder does not empty completely, you become at risk for developing urinary tract infections. Other serious problems can also develop over time, including bladder stones, blood in the urine, incontinence, and acute urinary retention (an inability to urinate). A sudden and complete inability to urinate is a medical emergency; you should see your doctor immediately. In rare cases, bladder and/or kidney damage can develop from BPH.

## Urinary Incontinence

### Also called: Overactive bladder

Urinary incontinence is loss of bladder control. Symptoms can range from mild leaking to uncontrollable wetting. It can happen to anyone, but it becomes more common with age.

Most bladder control problems happen when muscles are too weak or too active. If the muscles that keep your bladder closed are weak, you may have accidents when you sneeze, laugh or lift a heavy object. This is stress incontinence. If bladder muscles become too active, you may feel a strong urge to go to the bathroom when you have little urine in your bladder. This is urge incontinence or overactive bladder. There are other causes of incontinence, such as prostate problems and nerve damage.

Treatment depends on the type of problem you have and what best fits your lifestyle. It may include simple exercises, medicines, special devices or procedures prescribed by your doctor, or surgery.

**Urinary incontinence (UI)** is any involuntary leakage of urine. It can be a common and distressing problem, which may have a profound impact on quality of life. Urinary incontinence almost always results from an underlying treatable medical condition but is under-reported to medical practitioners.[1] There is also a related condition for defecation known as fecal incontinence.

### Causes

The most common causes of urinary incontinence in women are stress urinary incontinence and urge urinary incontinence. Women with both problems have mixed urinary incontinence. Stress urinary incontinence is caused by loss of support of the urethra which is usually a consequence of damage to pelvic support structures as a result of childbirth. It is characterized by leaking of small amounts of urine with activities which increase abdominal pressure such as

coughing, sneezing and lifting

Polyuria (excessive urine production) of which, in turn, the most frequent causes are: uncontrolled diabetes mellitus, primary polydipsia (excessive fluid drinking), central diabetes insipidus and nephrogenic diabetes insipidus.[2] Polyuria generally causes urinary urgency and frequency, but doesn't necessarily lead to incontinence.

Caffeine or cola beverages also stimulate the bladder.

Enlarged prostate is the most common cause of incontinence in men after the age of 40; sometimes prostate cancer may also be associated with urinary incontinence. Moreover drugs or radiation used to treat prostate cancer can also cause incontinence.[3]

Disorders like multiple sclerosis, spina bifida, Parkinson's disease, strokes and spinal cord injury can all interfere with nerve function of the bladder.

## REVIEW OF LITERATURE

### Urogenital infections in the elderly

[Article in German]

Weidner W, Hochreiter W, Liedl B, Ludwig M, Naber KG, Vahlensiek W, Wagenlehner FM

Klinik und Poliklinik für Urologie und Kinderurologie, Justus-Liebig-Universität Giessen, Rudolf-Buchheim-Strasse 7, 35385 Giessen. Wolfgang.Weidner@chiru.med.uni-giessen.de

The increasing incidence of asymptomatic bacteriuria and symptomatic urinary tract infections in the elderly requires a detailed consideration of this problem including age-specific medical and social risk factors. The increasing need for care, age- and gender-related complicating factors such as subvesical obstruction, adnexal infections, and incontinence, and the need for catheterization are predominant. Specific age-related diseases such as diabetes mellitus, pharmacodynamic alterations of antimicrobial substances, and changes in the vaginal colonization make increased demands on therapeutic strategies. Urologic implications resulting from this set of difficulties have not yet been investigated sufficiently and need further evidence-based work-up.

### Urinary incontinence and related urogenital symptoms in elderly women.

Molander U.

Continence Clinic, Vasa Hospital, Gothenburg, Sweden.

The aims of this study were to investigate the prevalence of urinary incontinence (UI), urinary tract infections (UTI) and related urogenital symptoms (UGS) in a representative sample of elderly women (Papers I & II), and to investigate factors (Papers II & III) influencing the prevalence of UI in these women. The effects of treatment with oral estriol and placebo on the vaginal bacterial flora, vaginal cytology and urogenital symptoms in elderly women

suffering from the urogenital estrogen deficiency syndrome were compared (Paper IV). A health care programme, based on an algorithm model, for the investigation and treatment of elderly women suffering from UI and related UGS, was designed and applied to a large group of elderly women (Paper V). The prevalence of UI increased in a linear fashion from 12% in the 1940 birth cohort to 25% in the 1900 birth cohort (Papers I & II). There was similar increase in the prevalence of UTI from 14% in the 1920 birth cohort to 23% in the 1900 birth cohort. In contrast, the reported prevalence of UGS such as vaginal discomfort, discharge and pruritus did not increase with age. The prevalence of UI increased with increasing parity and after hysterectomy, but was unaffected by the duration of previous oral contraceptive usage. There was no evidence to suggest that the prevalence of UI increased at the time of the last menstrual period. Neurological illnesses were an uncommon cause of UI in women  $\leq$  75 years of age (Paper III). Oral estriol (3 mg/day for 4 weeks followed by 2 mg/day for a further 6 weeks) had a positive influence on vaginal pH, cytology and the vaginal bacteria flora, and on UGS in elderly women suffering from the urogenital estrogen deficiency syndrome (Paper IV). Using objective techniques of evaluation (Paper V) it was possible to demonstrate successful treatment of elderly women with urge and mixed incontinence using a simple health care programme. There was however no evidence of improvement in women suffering from stress incontinence when using the same treatment regime. Women with all types of incontinence, treated according to this algorithm model, displayed an improvement in vaginal pH, vaginal cytology and the vaginal bacterial flora.

## **Urinary Urgency Medications May Compromise Discrete rather than Global Cognitive Skills.**

Prior research about cognitive problems associated with the use of urinary urgency medication (UUM) has reported mixed results that suggest procedures and/or assessments may need to be refined.

Ten elderly subjects who were actively taking a UUM were assessed with neuropsychological testing before and after a 4-week UUM washout period. Results were evaluated by examining discrete subtest results, full-scale scores, and the reliable change index methodology.

Four controls and 5 subjects with mild cognitive impairment showed significant improvement in at least one subtest score on well-characterized instruments.

In this case study of 10 subjects, withdrawal of oxybutynin and tolterodine resulted in significant changes in subtest scores with different patterns for each subject that were not necessarily reflected in their total scores. Thus, future clinical studies should always include analysis of subtest results as these changes may be the only indication that cognition has been improved or has declined significantly.

## **Different impact of the appropriateness of empirical antibiotics for bacteremia among younger adults and the elderly in the ED.**

To investigate the clinical impact of age on bacteremia among adults visiting the emergency department (ED).

Bacteremic adults visiting the ED from January 2008 to December 2008 were identified retrospectively. Demographic characteristics, severity, bacteremic pathogens with in vitro susceptibility, antimicrobial agents, and outcomes determined from chart records were analyzed as a case-control study.

Of 518 eligible bacteremic adults, 288 (55.6%) elderly patients ( $\geq 65$  years old) were case patients and 230 younger patients ( $< 65$  years) were regarded as control patients. The 28-day mortality rate was higher in the case patients than that in the control patients (11.8% vs 6.1%,  $P = .02$ ). The proportion of inappropriate empirical antibiotic therapy between the survivors and nonsurvivors was similar in control patients (69.4% vs 64.3%,  $P = .77$ ); but for the case patients, the proportion of inappropriate empirical antibiotic therapy in the survivors was lower than that in the non-survivors (27.6% vs 44.1%,  $P = .04$ ). Of note, inappropriate empirical antibiotic therapy was also one of independent risk factors of 28-day mortality by the multivariate analyses in the case patients (odds ratio [OR] 3.65;  $P = .049$ ). Other independent predictors of 28-day mortality in case patients included a high Pittsburgh bacteremia score ( $\geq 4$  points; OR 22.16;  $P < .001$ ), bacteremia due to foci other than urinary tract infection (OR 9.07;  $P = .002$ ), malignancy (OR 10.87;  $P < .001$ ), coronary artery disease (OR 5.68;  $P = .01$ ), and high serum creatinine ( $> 1.5$  mg/dL; OR 3.44;  $P = .04$ ).

For bacteremic adults, this study demonstrated the impact of inappropriate empirical antibiotic therapy on patients' outcome in the elderly was greater than that in the younger adults.

## **Clinical features of bladder cancer in primary care.**

Bladder cancer accounts for over 150 000 deaths worldwide. No screening is available, so diagnosis depends on investigations of symptoms. Of these, only visible haematuria has been studied in primary care.

To identify and quantify the features of bladder cancer in primary care.

Case-control study, using electronic medical records from UK primary care.



Participants were 4915 patients aged  $\geq 40$  years, diagnosed with bladder cancer January 2000 to December 2009, and 21 718 age, sex, and practice-matched controls, were selected from the General Practice Research Database, UK. All clinical features independently associated with bladder cancer using conditional logistic regression were identified, and their positive predictive values for bladder cancer, singly and in combination, were estimated.

Cases consulted their GP more frequently than controls before diagnosis: median 15 consultations (interquartile range 9-22) versus 8 (4-15);  $P < 0.001$ . Seven features were independently associated with bladder cancer: visible haematuria, odds ratio 34 (95% confidence interval [CI] = 29 to 41), dysuria 4.1 (95% CI = 3.4 to 5.0), urinary tract infection 2.2 (95% CI = 2.0 to 2.5), raised white blood cell count 2.1 (95% CI = 1.6 to 2.8), abdominal pain 2.0 (95% CI = 1.6 to 2.4), constipation 1.5 (95% CI = 1.2 to 1.9), raised inflammatory markers 1.5 (95% CI = 1.2 to 1.9), and raised creatinine 1.3 (95% CI = 1.2 to 1.4). The positive predictive value for visible haematuria in patients aged  $\geq 60$  years was PPV of 2.6% (95% CI = 2.2 to 3.2).

Visible haematuria is the commonest and most powerful predictor of bladder cancer in primary care, and warrants investigation. Most other previously reported features of bladder cancer were associated with the disease, but with low predictive values. There is a need for improved diagnostic methods, for those patients whose bladder cancer presents without visible haematuria.

### **Epidemiological and clinical aspects of urinary tract infection in community-dwelling elderly women.**

Urinary tract infections (UTIs) in elderly patients can be a complex problem in terms of approach to diagnosis, treatment, and prevention, because the patients often present nonspecific symptoms. The epidemiological and clinical characteristics of UTI in elderly women were studied, in order to make early diagnosis and

prevent serious clinical complications secondary to UTI.

This was a prospective population-based study, with elderly women, during their first medical office visit. Medical records were obtained by clinical history and physical examination in order to detect signs and symptoms of UTI and the presence of co-morbidities. Clean-catch midstream urine specimens for urinary dipstick test, sediment, and culture were collected; cervical samples for conventional Pap smears were also collected.

UTI was found in 16.55% of elderly women. The most frequent urinary symptom was foul smelling urine, in 60.6%. *E. coli* was responsible for 98 (76.56%) cases of significant bacteriuria; 34 (34.69%) were resistant to trimethoprim-sulfamethoxazole, and 21 (21.42%) to fluoroquinolones. Asymptomatic bacteriuria (AB) was not treated. The presence of predisposing factors demonstrated that the history of previous UTI ( $p < 0.001$ ), vaginitis ( $p < 0.001$ ), and diabetes ( $p = 0.042$ ) increased the risk for UTI.

This study confirmed the high prevalence of UTI among elderly women and its unusual clinical presentation. Diabetes, history of previous UTI, and vaginitis were shown to be predisposing factors for UTI; it is not necessary to treat AB in elderly women, even among diabetics.

### **Different patterns in use of antibiotics for lower urinary tract infection in institutionalized and home-dwelling elderly: a register-based study**

The quality and pattern of use of antibiotics to treat urinary tract infection (UTI) between institutionalized and home-dwelling elderly was compared.

Analysis was done on the quality of use of UTI antibiotics in Swedish people aged  $\geq 65$  years at 30 September 2008 (1,260,843 home-dwelling and 86,721 institutionalized elderly). Data

regarding drug use, age and sex were retrieved from the Swedish Prescribed Drug Register and information about type of housing from the Social Services Register. In women, we assessed: (1) the proportion who use quinolones (should be as low as possible); (2) the proportion treated with the recommended drugs (pivmecillinam, nitrofurantoin, or trimethoprim) (proportions should be about 40 %, 40 % and 15-20 %, respectively); In men, we assessed: (1) the proportion who used quinolones or trimethoprim (should be as high as possible).

The 1-day point prevalence for antibiotic use for UTI was 1.6 % among institutionalized and 0.9 % among home-dwelling elderly. Of these, about 15 % of institutionalized and 19 % of home-dwelling women used quinolones. The proportion of women treated with the recommended drugs pivmecillinam, nitrofurantoin or trimethoprim was 29 %, 27 % and 45 % in institutions and 40 %, 28 % and 34 % for home-dwellers. In men treated with antibiotics for UTI, quinolones or trimethoprim were used by about 76 % in institutions and 85 % in home-dwellers.

Results indicated that recommendations for UTI treatment with antibiotics are not adequately followed. The high use of trimethoprim amongst institutionalized women and the low use of quinolones or trimethoprim among institutionalized men need further investigation.

## AIMS AND OBJECTIVES

Elderly people suffer from a wide range of diseases among which urogenital disorders are very common. Age means the end of reproductive life and males and females above the age of 65 fall victims to many urogenital diseases in this post reproductive phase due to hormonal changes, innate structure of the urogenital system and susceptibilities to fungal and bacterial infections. Due to structural difference in the urogenital systems of males and females, the frequency with which a particular disease occurs is different in the two genders.

This study selects five diseases of the urogenital system namely

Kidney stone

Urinary Tract Infection(UTI)

Urinary Incontinence

Benign Prostate Hyperplasia(BPH) in males and

Uterine Prolapse in Females.

Percentage contribution of the individual diseases is seen in males and in females.

Comparison of the percentage contribution of the individual diseases is made between males and females.

Comparison of the percentage existence family history of the above diseases is compared between males and females.

## METHODOLOGY

A purposive sampling was done where elderly patients with urogenital disorders were identified and interviewed directly. Five categories of diseases that are commonly heard were chosen for this study—kidney disorders, urinary incontinence, urinary tract infection (UTI) and Benign Prostate Hyperplasia (BPH) in males and Uterine Prolapse in females. Of these the first three are all disorders of the urinary system and the last two are disorders of the reproductive system—the former in males and latter in females. The data were collected from 60 patients in total of whom 30 were males and 30 were females. All of them belonged to the middle income group and led ordinary lifestyles devoid of smoking or alcoholic addictions. The 60 elderly patients were all above 65 years of age and suffering from any one of the above mentioned disorders.

A comparative study is done here where the distribution of the above diseases is seen in males and females and the disease which has the highest occurrence has been identified in males and females independently. Apart from that the comparison has been made between males and females to see the percentage occurrence of the individual diseases in males and females and in each category of disease it has been detected whether the percentage of affected individuals is higher in males or in females.

The information was collected from the patients who were visited and interviewed individually in hospitals.

15 patients were identified from Howrah State General Hospital and their interview was taken with the help of qualified medical practitioner.

15 patients were identified from Wall's hospital in Srirampur. The hospital authorities extended their cooperation to gather information regarding the patients.

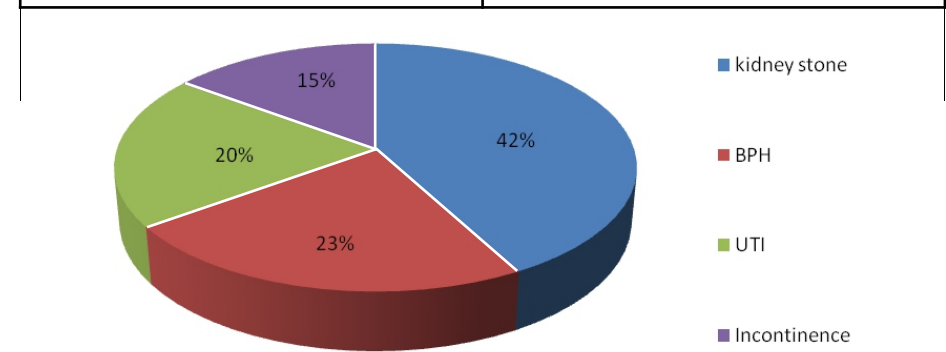
The rest of the 30 patients were identified from our own contacts, and

also from some additional doctors' chambers in Kolkata, Howrah and Srirampur.

## RESULTS AND DISCUSSIONS

TABLE - 1

| Category of disease               | Number of males afflicted (out of 30) |
|-----------------------------------|---------------------------------------|
| Kidney Stone                      | 13                                    |
| Urinary tract Infection           | 6                                     |
| Incontinence                      | 4                                     |
| Benign Prostate Hyperplasia (BPH) | 7                                     |



PERCENTAGE DISTRIBUTION OF UROGENITAL DISEASES IN MALES

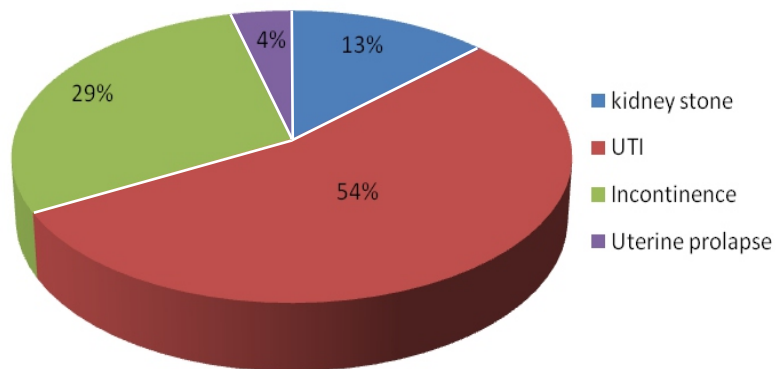
The above pie chart shows the percentage distribution of four urogenital diseases in 30 male patients. It is observed that kidney stone is present in 42% of the males and its occurrence is highest among all the urogenital diseases. It is followed by the prostate disease Benign Prostate Hyperplasia or BPH whose contribution is 23%. The occurrence of Urinary Tract Disorders or UTI is much lesser and contributes 20% followed by urinary incontinence which

contributes only 15%.

Thus most male patients are seen to suffer from kidney stones and Benign Prostate Hyperplasia and only a small percentage are victims of Urinary Tract Disorders(UTI) and Urinary Incontinence.

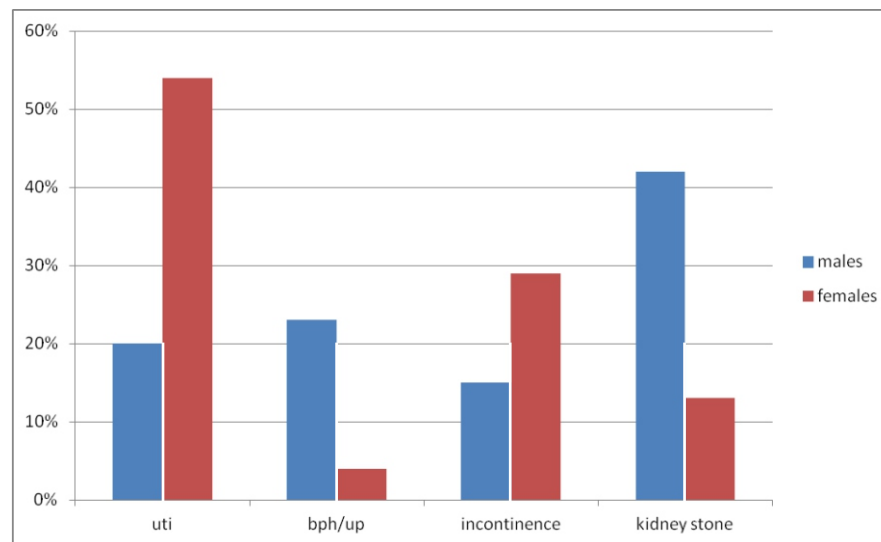
**TABLE - 2**

| Category of disease     | Number of Females afflicted (out of 30) |
|-------------------------|---|
| Kidney Stone            | 4                                       |
| Urinary tract Infection | 16                                      |
| Incontinence            | 9                                       |
| Uterine Prolapse        | 1                                       |



PERCENTAGE DISTRIBUTION OF UROGENITAL DISEASES IN FEMALES

As contrasted to the male urinary disorders kidney stone occupies a much lesser share of urogenital diseases and claims only 13%. Urinary Tract Infection takes the lead with a major 54% occurrence and Urinary Incontinence is also more prominent in females with 29% occurrence. A small percentage is seen to suffer from the disease of the reproductive system which is prolapse of the uterus. This disease takes 4% of the total share.



COMPARISON BETWEEN PERCENTAGE OCCURRENCE OF UROGENITAL DISEASES IN MALES AND FEMALES

It is seen from the above column chart that of the four categories of diseases kidney stone is found to occur much more in males than females and is approximately 30% higher in males. In case of urinary tract disorders the trend is just the reverse and it is higher in females than males by more than 30%. In the category of urinary incontinence females are seen to suffer more than males by almost 15%. In the case of the reproductive system disorder two diseases

are seen here- Benign Prostate Hyperplasia from males and Uterine Prolapse from females. The occurrence of BPH is higher than almost 15% in males as compared to uterine prolapse in females.

Thus it can be concluded from the above observations that Kidney stone and reproductive system disorder BPH is prominently higher in this study in males and urinary incontinence and female reproductive system disorder Uterine Prolapse is prominently higher in case of the females.

Kidney stone can be higher in these males belonging to the Middle Income group due to lifestyle, stress, high protein consumption and salt intake, working conditions and suffering from dehydration. Consumption of large amounts of tea and coffee containing caffeine can also be a contributory factor. Contrasted to this, females from this group suffer from lesser stress and are housewives or have less demanding working conditions, their protein intake and caffeine consumption is also lesser.

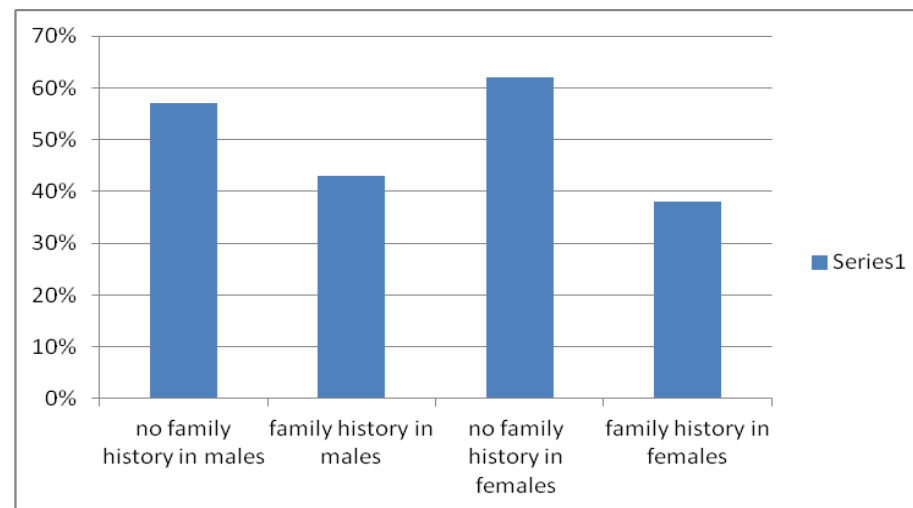
Urinary tract infection is higher in females than males because the urethra is smaller in females and it is easier for bacteria to cause infection. Also urethra in females is closer to the anus, and infections can come from there or sometimes spread from other parts of the body via the bloodstream.

Incontinence is higher in females than males because females have to face pregnancy and childbirth as well as menopause all of which are absent in males and contribute to urinary incontinence in females.

Uterine prolapses in females are sometimes mild to moderate and do not cause pain and often treatment is not required. Thus in this study it is observed lesser number of women suffer from advanced and detectable uterine prolapse that demands medical attention.

BPH is one of the most common neoplastic conditions affecting males and a major factor impacting male health. BPH has a broad

spectrum of treatment goals and occurs due to hormonal changes, late activation of cell growth etc. It may be due to increased fat intake that might be prevalent in this middle income group. Decreased physical activity and sedentary lifestyle after retirement may also trigger the development of BPH. Thus the occurrence of this disease is found to be pretty high.



COMPARISON BETWEEN EXISTENCE OF DISEASE FAMILY HISTORY IN MALES AND FEMALES

It has been seen from literature that many urogenital disorders are inherited whereas many are not. In this study it has been observed that both in the case of males and females urogenital diseases have a history of inheritance in about roughly 40% of the cases with males showing a slightly higher percentage of inheritance than females. Sometimes the disease itself may be inherited or the predisposition factors leading to the disease like obesity, diabetes etc. may be inherited.

## SUMMARY

- Incidences of kidney stones are found to be higher in the elderly males here.
- Incidences of Urinary Tract Infection(UTI) are found to be higher in elderly females in this study.
- Incidences of Urinary incontinence are found to be higher in elderly Females in this study.
- Incidences of Reproductive system disorder Benign Prostate Hyperplasia(BPH) in males is much higher as compared to reproductive system disorder Uterine prolapse in females.
- A consistency is observed in urogenital disorders running in families in both males and females. Roughly 40% of the cases reportedly have family history of urogenital diseases in both males and females.

## Conclusion

Ideal geriatric care requires a multidisciplinary approach. Successful urogenital system care in the aging population requires an understanding of the physiology of aging, recognition of the special issues facing the elderly, and interaction with geriatricians, urologists, pharmacists, social workers, educators, and dietitians to ensure the most efficacious treatment. When prescribing medicines or surgery for this population, providers should pay special attention to possible side effects and drug interactions. More research is needed to help us understand the full impact of urogenital diseases on this expanding and complex segment of our population. Special attention should be paid to those diseases that are more frequent and have a pattern of occurring in different generations in a family.



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