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HIGHLIGHTS

Sarcopenia: An Emerging Disease in the Elderly •

Geriatric Health Hazards
Associated with Natural Environment •

Scope and Probability of
Covid-19 Vaccine for Elderly •

Liver Diseases in Elderly: •
Preventive and Social Aspects



Announcement

Certificate Course in Geriatric Medicine & Gerontology (Online Course)

by

Geriatric Society of India®

In association with

Khaja Bandanawaz University, Kalaburagi

October 2020 – December 2020

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Dr. Prabha Adhikari

President of Geriatric Society of India,
Professor of Geriatric Medicine,
Yenepoya University



Geriatric Education in India-Gaining Momentum despite COVID-19 Pandemic

Need for geriatric Care in India :India has more than 120 million of elderly of which 3.7 % suffer dementia 40 % suffer from poor vision, and 20% have auditory problems. 1.6 million annual stroke cases are reported every year of which nearly 40 percent live with severe disability. In addition 1 in 3 suffer from arthritis ,1 in 3 suffer from hypertension and 1 in 5 have diabetes mellitus, 1 in 3 suffer from bowel disorders, 1 in 4 suffer from depression and 1 in 10 have falls and sustain a fracture. One in 3 suffer from bowel disorder . Cancer is, 10 times more common in geriatric population. To manage this population with multi-morbidity, multiple disabilities and geriatric giants, we do not have trained physicians and practitioners. Active ageing can minimise these figures but even to render these preventive services and health promotive services we do not have trained personnel

- Gaps in training :.M.D. Geriatrics is offered in limited number of medical colleges and limited number of medical colleges are capable of including geriatrics in undergraduate curriculum. P.G diploma in Geriatrics offered from IGNOU and other institutes like A.K. Sinha Institute and Public Health Foundation of India have tried to bridge the gap but the courses are chosen by very few medical practitioners. Under the National Programme for the Health Care of the Elderly (NPHCE) regional resource centres have been set up to train resource persons who train Primary care physicians and paramedical staff. Several district hospitals are having dedicated beds with trained medical officers to take care of the elderly. First round of one day orientation programme is just getting completed. However Geriatric care needs more orientation than just a day's training programme. Although in-depth training is necessary and is in the pipeline, we do not have experienced geriatricians to deliver this programme. And also this does not cover primary ,Secondary and tertiary care physicians delivering geriatric care in private sector. There is a huge gap in elderly care in the country.
- Pandemics and ageing :COVID-19 suddenly put a halt to the routine care of our elderly patients and routine work of our senior practitioners of geriatric care in our country .Geriatric Society of India and its members have remained very active during COVID-19 Pandemic by releasing Guidelines for management of elderly with COVID-19 and also successfully organised the midterm conference online.
- Geriatric Certificate Course Online and GSI:GSI has always been leading in Geriatric Education in India by publishing books and guidelines to help practitioners. With the



confidence that the society gained in the power of online educative sessions, GSI thought of bridging the gap in elderly care by using the online platform to develop a certificate programme which is unique, affordable and accessible. Curriculum was prepared by a panel of experts under the guidance of an editorial board for practising physicians and general practitioners, focusing on 3 different aspects of Geriatric care namely healthy ageing and health promotion, Core Geriatrics and Medicine as applied to Geriatrics. Each Power point was reviewed by a group of editors and validated. Two lectures of 20 minutes duration were delivered twice a week on Tuesdays and Fridays between 7-8.30 PM with assessment at the end of each module. Their doubts were clarified by the faculty at the end of the lectures for 40 minutes. Recorded online lectures were also made available for a week for those who missed the lectures. In total 46 lectures were delivered by 36 faculty members. The course was launched on the 1st of October and likely to end on the 31st of December. This was received with lot of enthusiasm by clinicians all over India with registrations reaching nearly 165. They have also been given text book of Geriatric care and other publications of Geriatric Society of India, which will empower them in practising geriatrics with confidence. Successful candidates will get their certificates in a convocation.

- Undergraduate Geriatric Education : It is heartening to know that Under Competency Based Medical Curriculum MCI/NMC has included 24 competencies in Geriatrics for undergraduate in Medicine. Only Handful of Medical Colleges have started the department of Geriatrics in India .To deliver this, most of the medical colleges may not be capable .With this in mind, a set of like-minded senior Geriatric practitioners and faculty joined hands to develop competency based Geriatric Curriculum under a group named GERG (Geriatric Education and Research Group) for the programme Geriatrics for Undergraduate Medical Students (GUMS).Geriatric Society of India and several of its members joined hands with the group to try out an online UG course through which 24 core competencies were delivered in 13 modules where each module was delivered as weekly module of 3 recorded lectures which was available to them for a week through Google Class room. Videos, additional reading materials and assignments were shared through Google classroom. Nearly 166 final year students from all over India registered for the course of which 142 students took the course and 98 completed the course. The feedback for the course was excellent.
- Training of Trainers : It is important to train teachers of UG Geriatric education and as the difference in holistic care versus disease oriented care, focus on functioning and independence rather than freedom from diseases. Principles of preventive Geriatrics more than curative geriatrics, have to be learnt by long term experience or by training. There is a great need for training of trainers in this direction and GSI should take this task also on its shoulders. We can involve International faculty from geriatric societies all over the world who can help us in delivering a course for trainers on line. With such dynamic leaders and ever willing members this will not be an impossibility. Long Live GSI and Geriatric Education.

Sarcopenia: An Emerging Disease in the Elderly

PARTHA S RAY*

ABSTRACT

Sarcopenia, or the decline of skeletal muscle tissue with age, is one of the most important causes of functional decline and loss of independence in older adults. Sarcopenia is defined by both loss of muscle mass and loss of muscle function and strength. Its cause is widely regarded as multifactorial, with neurological decline, hormonal changes, inflammatory pathway activation, decline in activity, chronic illness, fatty infiltration and poor nutrition. In addition apoptosis, mitochondrial decline, and the angiotensin system in skeletal muscle have highlighted biological mechanisms that may be contributory. Interventions in general continue to target nutrition and exercise.

Excess adiposity is associated with a state of low-grade chronic inflammation which contributes to the decline in muscle mass and strength observed in older adults with sarcopenic obesity. Moreover, ectopic fat accumulation in skeletal muscle is associated with impaired muscle strength, an important determinant of poor health in older age.

The rising prevalence of obesity in older adults coupled with the age-related decline in muscle mass act synergistically to maximize disability, morbidity, and mortality. Given the public health implications, an effective treatment strategy in an ageing population is essential. It is proposed to treat sarcopenic obesity primarily on a combined approach of lifestyle interventions, weight loss and exercise.

Keywords: Sarcopenia, Obesity, Frailty, Osteoporosis, Muscle mass, Exercise therapy, Metabolic syndrome.

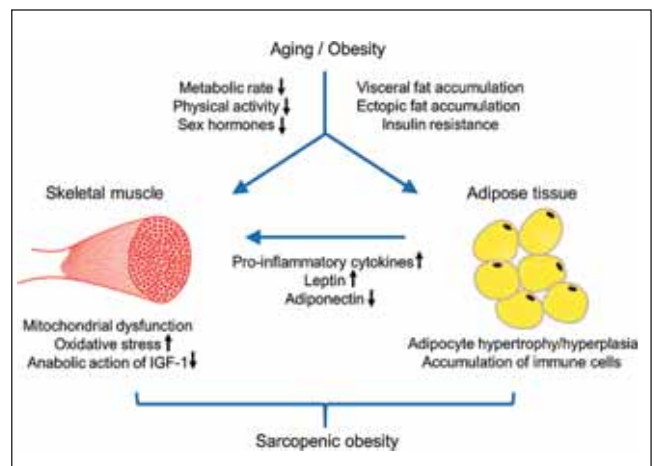
INTRODUCTION

Sarcopenia (from the Greek “sarx” - flesh and “penia” or loss) is common in people over 50 years of age. The term was proposed by Irwin Rosenberg in 1989.¹ It was thought to be part of normal ageing being prevalent between age 60 and 70 (from 5 -13%) and increasing to 11-50% in individuals over 80 years.² Initially considered to only represent loss of muscle mass, now the European consensus definition associates it with loss of muscle function in addition, leading to functional decline, hospitalisation and mortality. It has been linked to physical “frailty” leading to reduced physical performance impairing quality of life, independence and comorbidities. In October 2016, the new ICD 10 code M62.84 recognised sarcopenia as a disease.³ Of note since National Institute of health publicised osteoporosis as a disease only in 1984 with the US FDA approving medications it became universally agreed for osteoporosis to be treated effectively.⁴ One hopes sarcopenia identification will lead to clinical research and drug trials for understanding the cause of the same and interventions will result from this new disease label. With the changing population demographics of elderly subjects becoming 2.1

billion in 2050⁵ sarcopenia and its complications will consume significant healthcare resources unless effective preventative and treatment for the same is instituted at present.

RISK FACTORS

Cytopenia starts at age 40 and rapidly progresses after 75 years. Lean muscle mass contributes approximately 50% of



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total body weight in young adults but declines with ageing to 25% at 80 years.⁶ One in four adults are sedentary and can lose as much as 5% of their muscle mass per decade after age 30.⁷ Malnutrition resulting from reduced food intake in older adults contributes to sarcopenia from protein deficiency.

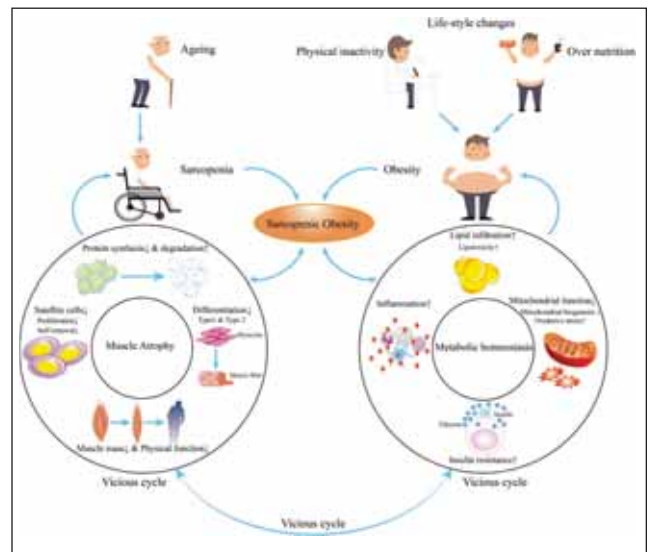
SARCOPENIA SYMPTOMS

Through decreased muscle mass and strength and effects of frailty, problems with mobility, falls and fractures, decreased activity making sarcopenia worse, loss of independence, osteoporosis and obesity from inactivity become inevitable risks. Decrease in resting metabolic rate leading to higher prevalence of insulin resistance, type II diabetes, adverse lipid profile and high blood pressure follow-on soon afterwards as age advances. Despite losing muscle mass weight gains through accumulation of adipose tissue resulting in a yet newer disease entity “sarcopenic obesity”. Clearly the combination of osteoporosis and sarcopenic/sarcopenic obesity contributes significantly to morbidity, increasing healthcare costs, dependency, loss of quality of life and early avoidable mortality.⁸

Sarcopenia development is multifactorial. There is increased protein metabolism and loss of sensitivity of the muscle cells to the anabolic stimulus from IGF-I and essential branched chain amino acid, leucine. This leads to anabolic resistance.⁹ Other secondary hormonal and nutritional factors also contribute.

RISK FACTORS

Definition of Sarcopenia for clinical, epidemiological and clinical trials: the European working group on Sarcopenia in older people (EWGSOP) in 2010 used the criteria of low muscle mass accompanied by low muscle strength with or without low physical performance as the definition.¹⁰ In clinical practice gait speed measuring the

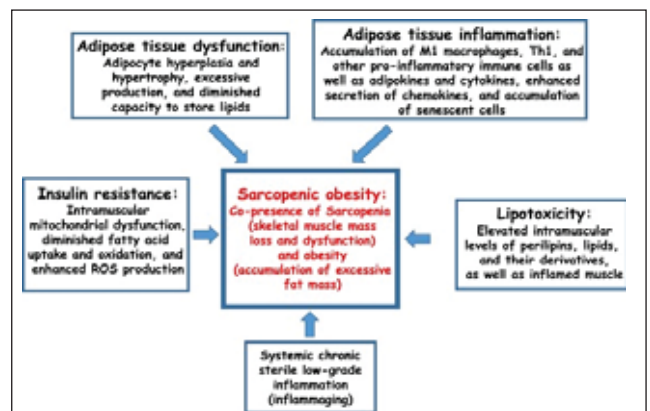


time taken to walk a set distance is defined with the speed cut-off point of 0.8 m/s as definition for Sarcopenia.¹⁰ Grip strength for measuring muscle strength using a dynamometer is used. Muscle mass measurements through anthropometric, bioelectrical impedance and dual-energy X-ray absorptiometry have been recommended to diagnose Sarcopenia and have evidence-based therapy through randomised clinical trials.

With the recognition of Sarcopenia as a new disease entity since October 2016 it is hoped clinical trials and epidemiological studies and pharmacotherapy will get initiated.

THERAPY

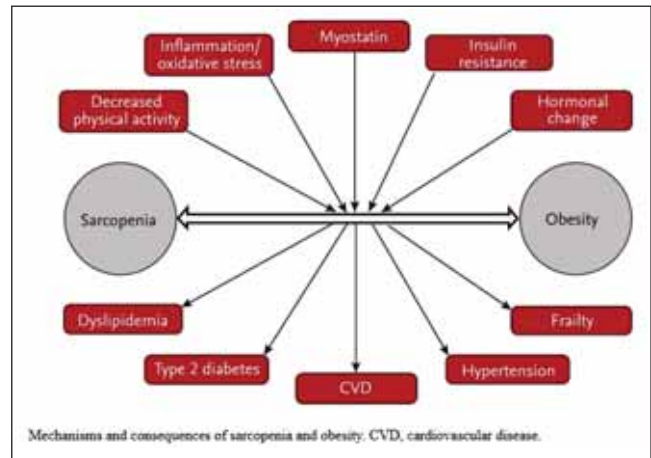
- 1) Exercise therapy: aerobic exercise, progressive resistance exercise, balance exercises and flexibility exercises have potential benefits of increasing strength, aerobic capacity and muscle protein synthesis as well as



increasing muscle mitochondrial enzyme activity across all age groups. The exercise for a particular individual is based on prescription and as per the WHO recommendation is recommended on most days of the week to slow down muscle loss.¹¹

2) Nutritional inputs:

- a) Increasing dietary protein: It has been seen that 12% of men and 24% of women over the age of 70 eat less than the recommended dietary allowance of protein 0.8 g per kg of body weight per day. The recommendation to avoid Sarcopenia is 1.25 g per kg per day.¹²
- b) Leucine an essential branched chain amino acid along with valine and isoleucine with an average daily in take of 40 mg per kg per day is critical to maintaining healthy muscle tissue. The main sources of the branched chain amino acids are chicken and fish, cottage cheese, lentils, sesame and peanuts. At rest leucine has an anabolic effect by increasing protein synthesis and reducing protein degradation resulting in positive net muscle protein balance.¹³ Whey protein results in greater post-prandial protein retention than casein indigestion with higher leucine content. The source of protein (animal or vegetable source) does not influence muscle strength when the total protein intake is adequate. Dietary interventions with protein rich food has several advantages over protein product supplementation containing free form of amino acids. Thus, for elderly moderate serving of protein of high biological value during each meal is recommended. Lean meat, fish, eggs and low-fat dairy products along with beans, pulses and lentils offer good dietary interventions.
- c) Omega-3 fatty acids in fish oil or flaxseed oil increases the rate of muscle protein synthesis.¹⁴
- d) Fruits and vegetables rich in antioxidants along with whole grains reduce oxidative damage via inflammation contributing to Sarcopenia. Meat and cereal grains have negative effects on muscle mass.
- e) Avoidance of alcohol and smoking in addition to preventing other organ damage and cancers contribute to prevention of Sarcopenia.
- f) Processed foods containing refined sugars and carbohydrates (for example high fructose) and trans saturated fats causes muscle inflammation leading to Sarcopenia. Processed foods containing higher omega six fatty acids without the balancing effect of omega-3 fatty acids cause inflammation in the muscles leading to muscle atrophy.¹⁵
- g) Vitamin D deficiency which is subclinical and worldwide now causes reduced muscle strength,



increased body instability, falls and further disability through fractures and bone healing.¹⁶ Vitamin D supplementation by 800 to 1000 international units per day is associated with improvement of muscle strength and balance.¹⁷ The effect of vitamin D is most prominent in individuals above 65 years of age.

SARCOPENIC OBESITY

This emerging disorder where individuals have reduced lean mass to merit a Sarcopenia diagnosis have concurrently raised body mass index to classify them as obese. Again, the metrics of obesity determination and BMI calculation is changing with waist circumference becoming an important determinant including as a marker of the metabolic syndrome.¹⁸ These individuals with loss of muscle mass have an expanded visceral adipocyte mass and have lost height due to osteoporosis impacting on the standard BMI measurements. There are concurrent hormonal changes including of leptin and ghrelin which affect feeding habits of individuals, production of pro-inflammatory cytokines, reduced adiponectin and induction of insulin resistance. This leads to type II diabetes and micro/macro vascular complications. There is the additional endothelial dysfunction and blood hypercoagulability promoted by adipocytokines produced by visceral adipocytes – TNF alpha and other procoagulants. Obstructive sleep apnoea results with pulmonary hypertension and other complications. Thus, the combined effects of obesity and the widespread metabolic derangement that it causes and the effects of Sarcopenia adds to the overall morbidity of the elderly. Although we have some operational definitions of Sarcopenia and obesity the definitions of the combined entity “Sarcopenia obesity” still need refining for the purposes of clinical trials and research.¹⁹

Treatment of Sarcopenia obesity involves calorie restriction, physical activity and specific protein

supplementation. Calorie restriction by 500 to 1000 kcal per day causing initial weight loss of 0.5 kg per week leads to about 10% loss in six months in a sustainable fashion. Various exercise regimes with prescribed training modalities have been trialed and recommended. The risks of reducing body weight and metabolic side effects also need to be considered.²⁰

CONCLUSION

In the elderly, Sarcopenia and Sarcopenic obesity are the new diseases that will increase disability as the population demographics project people above the age of 65 reaching 2.1 billion by 2050. This ageing population suffering from the burden of metabolic syndrome including diabetes, dementia and Sarcopenic obesity will exhaust healthcare systems resources and seniors will become very much dependent on institutional care and caregiver support. In a rapidly changing Indian society, the social cultural changes will require setting up of social care packages and institutions for the elderly for support in their activities of daily living and quality of life which will get impaired through these comorbidities. Solutions involve undertaking preventive measures and awareness of this developing silent epidemic of obesity and more significantly reducing muscle strength and mass and its impact on functional aspects of mobility, falls and fractures and dependence and overall, the deterioration of quality of life.

Focus on research for drug development to counter these complex metabolic derangements would need proactive participation from gerontologists, internists and metabolic specialists/endocrinologists to ensure we have in addition to the primary lifestyle changes (diet and exercise) that we have ignored to our detriment for far too long, development of new drugs that address the adverse cytokines and adipocyte generated immune inflammatory small molecules that will lead to profound disability and healthcare burden globally and particularly in India when the current younger generation starts to age in 30 years' time – 2050.

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Geriatric Health Hazards Associated with Natural Environment

SAMUDRA GOOPTU*

INTRODUCTION: A BRIEF REALITY CHECK

World over the past two decades or so has seen a major makeshift towards a more globalised system with an increasing dependency upon technology and machines. With increasing technological developments and investments, innovations worldwide have boosted exponentially, making time-intensive processes of life way easier and faster. Convenience gradually replaced health, to cope up with the rapid pace of life. But on the flipside, it has come at a cost, a cost the effects of which has taken a toll on the health of the people at large.

The geriatric field of medicine which earlier was not deemed to be a specialised area of treatment, has come to the fore over the past few decades, especially in the urban and semi-urban scenario. The reason for this may be varied, but all of such reasons narrow down to the root cause of the changing ecology and climate change.

A major reason why the geriatric field of medicine and its root cause with environmental factors is being delved into in the recent years, is because these environmental factors and its corollary ramifications of sustainable development may pave the path for identifying and narrowing down the “cause and effect relationship” of the geriatric problems before laserising them down with adequate remedy.

The very idea of sustainable development and geriatric medicine is both “futuristic”. Both entail the very idea of “while today is yesterday's tomorrow, it is tomorrow's yesterday”.

The changing demographics of a developing country with a rising birth rate and lower death rate, has led to the emergence of a significant pool of aged patients, which is taking a major toll on the health care facilities in the government and private sector hospitals. Chronic ailments like diabetes, hypertension, chronic lung, kidney and liver diseases, and cancer are the major resource demanding facilities which overburden the already fragile healthcare facilities which have recently been unravelled during the COVID-19 times. Chronic toxin exposure has also been linked to development of degenerative neurological

disorders like dementia, parkinsonism and spinal and bone disorders.

Public health, sanitation, elderly vaccination and inadequately resourced healthcare for the elderly has been a major drawback in providing universal coverage of health services for the aged and ageing population.

Just like every new remedy comes with a new problem, so has the geriatric area of medicine. It is pertinent to note, that one of the major reasons for the rise of geriatric area has been the rapid change in environment or natural habitat of the people to which this field of specialisation caters to. The target group of geriatric medicine has seen the most dynamic and robust changes globally. And as a result, they have been the very ones who have been a witness and a consequent victim of the rapid change, the preparedness of which probably the human body is not being able to keep up with.

Every change has a gestation period for adaptation, and if that gestation threshold is breached, the consequence of it are faced by the human body which cannot keep up with it.

The ecological imbalance leading to the evolving problem since the days of industrialisation from the agro-based lifestyle of Indian population and rapid shift from rural to urban setups, there has been a rampant scale of deforestation and consequent shrinkage of greenery leading to environmental imbalance and climate change. The problems which were perceived to be coming after centuries is now evolving over decades due to abundant misuse of carbon and fossil fuels, alongside the rampant use of non-biodegradable plastic.

Use of chemical insecticides, pesticides and non-organic fertilizers in agriculture and farming has led to cancer risks quite significantly among the majority of the population especially the elderly.

Global warming, which was only deemed to be a theoretical challenge is now being experienced acutely in the recent times and increasing natural calamities like super-cyclones, earthquakes, other tectonic movements, forest fires and melting of the polar ice.

Prominent health issues among the Geriatric population

A few prominent health conditions among the geriatric population world-wide has been listed by the World Health Organisation (“WHO”). As per a fact sheet released by the

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WHO dated February 8, 2018, the global health body has noted – “hearing loss, cataracts and refractive errors, back and neck pain and osteoarthritis, chronic obstructive pulmonary disease, diabetes, depression, and dementia”, to be the most common and prominent health issues among the geriatric population.

Now let us examine the reasons which lead to these health conditions mentioned above:

Hearing loss: The major non-genetic factors of hearing loss are exposure to noise, increasing age, ototoxic drugs, viral and bacterial infections, and interactions between these factors. Exposure to occupational and environmental noise, certain diseases and life styles (diet, stress, drugs) may interact with the specific effects of ageing. The result is moderate to severe hearing loss in a majority of older population.

Cataract: Nuclear cataracts have been identified to mainly have been caused by environmental factors. The most important environmental effect is smoking. Other factors, such as diet, exposure to sunlight, diabetes, oestrogen sufficiency or deficiency, and cardiovascular factors, have been associated with the frequency of nuclear cataracts in some but not all studies.

Chronic Obstructive Pulmonary Disease (“COPD”): Smoking, long-term exposure to air pollution, second hand smoke and dust, fumes and chemicals (which are often work-related) can cause COPD.

Diabetes Mellitus: Environmental factors play a role in the etiopathogenesis of diabetes. They include polluted air, soil, water, unhealthy diet, stress, sedentary lifestyle, vitamin-D deficiency, exposure to enteroviruses, and damage to immune cells.

Dementia: Multiple environmental factors have been identified to be causing dementia. Lack of vitamin D -

produced by the body through exposure to sunlight - and exposure to air pollution were implicated, along with occupational exposure to some types of toxins especially pesticides.

Thus, we can see that majority of health issues which are common among the geriatric population are related to environmental factors or consequences of environment related factors. While today's geriatric population has been part of the constantly evolving change, they are the very ones who have been first exposed to the ill-effects or adverse effects of these changes. They have indirectly been the human guinea pigs of the good, bad and the ugly.

While the good ones might have given them the instant benefits of the day, the bad and the ugly seem to have conspired with their usual ageing illnesses into developing large scale health hazards.

PROBABLE SOLUTION

The probable solutions to curb this ever-rising curve of environment related health hazards, include:

- Reduced use of non-biodegradable plastic.
- Organic methods of farming instead of chemical induced insecticides, pesticides and fertilizers.
- Afforestation drives along with wildlife conservation should be widely encouraged.
- Public health, sanitation, vaccination and community driven health care initiatives should be prioritised in healthcare budgets, which presently display a very meagre and paltry figure.

Community living for the elderly should be made a priority especially in the urban setups because of the globalisation which induce the younger generation to migrate away from their native homelands for seeking job opportunities and educational pursuits.

Scope and Probability of Covid-19 Vaccine for Elderly

P.S. SHANKAR*

Immune deficiency forms an important risk factor for development of COVID-19. This is very much evident in elderly persons. In addition, the co-existing diseases such as diabetes, hypertension, cardiovascular diseases, obstructive and restrictive lung diseases, chronic renal insufficiency, and cancers., Elderly persons exhibit age-dependent humoral and immune cell alterations and immunosenescence (waning of immune responses) and malnutrition.

Many potential vaccines for COVID-19 are undergoing clinical trials and world is waiting eagerly for their results. If any vaccine is proved safe and effective, it has to be approved by the National regulatory body. Then it has to be produced to the standards laid down and distributed for use. Mankind should have an equitable access for an effective and safe vaccine.

The results of large phase-III clinical trials are in progress to determine the efficacy and safety of the vaccine. The results are to be analysed along with age groups affected, and risk factors for disease. Based on the recommendations of World Health Organization (WHO), the country has to approve the vaccine for national use and develop policies for its use. The vaccine has to be manufactured in large amounts as it has to be used on a very large population of the country. The vaccine when it is distributed in the vast country, has to take into account about the logistics, stock management and temperature control. It has to ensure highest safety standards.¹

Vaccine alone will not solve all problems. We have to continue testing, contact tracing, physical distancing and the use of masks.

Several different types of vaccines for COVID-19 are being developed. They include the following¹:

1. Inactivated virus vaccines by using an inactivated virus that has the capacity to elicit an immune response without causing disease
2. Protein-based vaccines that utilise harmless, fragments of proteins or proteins shells that mimic the SARS corona virus-2 to generate safely an immune response
3. Viral vector vaccines which use a virus that has been genetically engineered so as to generate corona virus proteins with a capability to produce an immune response without causing disease.
4. RNA and DNA vaccines which are produced by using genetically engineered RNA or DNA to produce a protein that is able to produce an immune response.

There are some unanswered questions. It is not known how long the COVID-19 vaccine will provide protection. The immune response that is provided by the vaccine appears to protect against reinfection. But it is not yet proven. It is also not known how many doses of vaccine are needed though two-dose regimens are being tested.

The pandemic of COVID-19 has shown that immunization of the population through vaccination is of highest public health priority. The genetic sequencing of SARS-COV-2 was done within a month after establishing the aetiology of COVID-19. Since that time many research institutions in different countries are working to obtains a vaccine that will protect the mankind.

Older adults are succumbing to COVID-19 in the country. In a study on the safety and immunogenicity of the ChAdOx1 nCoV-19 vaccine (a replication-defective chimpanzee adenovirus vector vaccine) with a MenACWY meningococcal vaccine comparison group in older adults (those older than 55 years) Ramasamy and colleagues, found the ChAdOx1 nCoV-19 vaccine is better tolerated in older adults than younger adults and has similar immunogenicity across all age groups after a boost dose.²

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Andrew and McElhaney found that both local and systemic reactions were more common with ChAdOx1 nCoV-19 than with MenACWY, but decreased with increasing age. The anti-inflammatory response appears to be low-grade chronic inflammation, and suppression of acute inflammatory process.² Immunogenicity was robust and similar across age groups with a boost dose. Anti-spike protein IgG responses at 28 days following the boost dose were similar among all age groups.³

Older adults and older adults with co-morbid conditions form the top priority group to receive the vaccination. More studies are needed how underlying diseases and frailty affect safety, reactogenicity, immunogenicity and efficacy of the vaccine elderly population.³

Elderly persons should be given the vaccine on top

priority. Those with co-existing disorders will be have precedence over those without any co-existing diseases.

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Liver Diseases in Elderly: Preventive and Social Aspects

A.K. Singh*, Shikhar Garg**

INTRODUCTION

Diseases of Liver are a common cause of morbidity, hospitalization and mortality throughout the world contributing significantly to health care burden of countries. With advancing age everyone tends to lose their ability to maintain a steady state (Homeostasis) in body due to alterations in structure and function of various organs of the body and subsequently becomes vulnerable to external stress or damage. They also become more sensitive to progression of diseases. Ageing is a major risk factor for most of the chronic diseases. With increase in average life span of human race chronic diseases have come to the forefront. The same is true for Liver diseases in elderly as well.

The volume of Liver and its blood supply gradually decreases with progression of life. In elderly, Liver volume usually decreases by 20 to 40%^{1,2,3}. In people above the age of 65 years, blood flow of Liver decreases by approximately 35% as compared to those below 40 years of age^{4,5}. In Liver, Cholesterol and neutral fat volume increases with advancing age. There is also reduction in number of Liver cells (Hepatocytes) in elderly resulting in decrease of weight of Liver⁶. In those above 70 years of age, the total amount of enzymes (Cytochrome p450) decreases to approximately 70% of its original level resulting in decreased metabolism and detoxification in Liver⁷. Furthermore, tolerance of acute liver injury becomes more difficult in them due to decreased expression of growth factors and decline in mitochondrial functions with advancement of age^{1,8,9}. Also, since immunity declines with age, the geriatric population is prone to infections¹⁰. Restricted access to clean food and water further adds to the insults.

The spectrum of infections affecting Liver is wide, ranging from acute and transient such as Hepatitis to chronic and life-threatening such as Cirrhosis. The cause of Liver diseases in elderly ranges from those due to chronic infections like Viral Hepatitis, Autoimmune Hepatitis to those due to protracted toxin exposure such as Alcoholic Liver Diseases and Non-Alcoholic Steatohepatitis (NASH). Though specific treatment for many of these diseases is present, there is lack of any curative therapy for Cirrhosis of Liver which is the final stage of these diseases.

SOCIALASPECTS

Liver diseases are associated with a range of social entities which play important role in their manifestation and outcome. Apart from age, gender also plays an important role in Liver diseases with Gallstones being commoner in females and Alcoholic Liver diseases common in males. Socioeconomic status also plays an important role in Liver disease.

Liver diseases are notoriously associated with obesity and chronic alcoholism to begin with. Regular and heavy consumption of alcohol leads to oxidative stress and injury to Liver which ultimately culminates as Cirrhosis. Associated complications like abdominal swelling (Ascitis) and generalized body swelling (Anasarca) lead to decreased mobility as well as difficulty in walking and doing regular chores. Liver diseases are also associated with loss of appetite, malabsorption and frequent bouts of vomiting which predispose to malnutrition and interfere with general sense of well-being. Visible venous prominences which occasionally appear over chest and abdomen cause anxiety to patients. Liver diseases are typically associated with wasting of muscles and generalized weakness which deprive the patient of livelihood and regular income, adding to the woes.

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A patient of Liver disease becomes susceptible to contracting many other diseases like Type 2 Diabetes, Gall bladder stones and Hepatocellular Cancer which can significantly add to the economic burden of the disease. Acute manifestations of Liver Cirrhosis like bleeding from Esophageal Varices can lead to life-threatening scenarios and are a source of constant distress to patient as well as care takers. Since many Liver diseases tend to have a protracted course of illness, delayed recovery and significant complications, they incur significant psychological and economic distress to patients.

PREVENTIVE ASPECTS

Taking into consideration the enormous impact Liver diseases have on physiological, psycho-social and economic well being of the elderly, it becomes imperative to stress on the preventive measures. Awareness regarding consumption of clean food and water goes a long way in preventing hepatic infections by viruses, parasites and other organisms. Awareness and behavioural change communication campaigns for such measures are essential to educate not only the geriatric population but the masses as well.

With advancing age the metabolic, detoxifying and regenerative capabilities of liver begin to decline and hence any effort to preserve Liver function must be started at an early age. Life-style modifications such as cessation of smoking, alcohol consumption and fatty meals with incorporation of regular exercise must be instituted early in life to prevent the time-dependent damage they cause. Consumption of a diet having less saturated and trans fats has both cardiovascular and hepatic benefits. Incorporation of fibers and roughage in diet reduces cholesterol absorption from gut and also has a preventive role against gall bladder stones. Control of obesity is also very essential as it is a risk factor as well as compounding factor for many Liver diseases.

Chronic infections with Hepatitis Viruses B, C and D also constitute a major burden of Liver diseases in the elderly. Since these viruses are usually transmitted by parenteral and sexual routes, safe transfusion practices and stringent screening of blood and blood products along with educating regarding use of barrier contraceptives is the mainstay of prevention against them. Another important route of infection is needle stick injury or by sharing of

needles amongst individuals. These can be prevented by use of appropriate technique, meticulous sterilization and precautions by health care workers like use of disposable syringes, needle shredders and ensuring proper disposal of wastes as well as by avoidance of self medication and seeking treatment from quacks by patients.

CONCLUSION

Liver diseases are a common cause of illness in the elderly age group and are associated with predisposing factors like chronic alcoholism, obesity and infections. The disease process is usually chronic and in severe form can lead to major adverse outcomes which significantly diminish the quality of life and life span of patients in addition to causing enormous psychological and economic distress. Keeping these issues in mind, the best strategy is to prevent as well as to halt the progression of preexisting Liver diseases by educating the masses and especially the susceptible population regarding appropriate life-style modifications and specific prevention strategies.

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Collaborative Approach of Different Pathy - Emerging Need in Geriatric Care

A report by Dhiresh Kumar Chowdhury

"Coming together is a beginning, staying together is progress, and working together is success." Henry Ford

Keeping this context in the mind, a Webinar on the topic "Collaborative approach of Different Pathy - Emerging need in Geriatric care" was organized by Banchbo Healing Touch (Eastern India's First 24 x 7 Home based Health care support) in association with Geriatric Society of India, West Bengal Branch & Dignity Foundation, Kolkata Chapter on 5th September, 2020. This was supported by Bengali daily 'Eisamay' Patrika (TOI group) and telecast through Delhi based channel City Live through Youtube live.

Experience has taught us that the complex health care needs of frail elderly demand scientific knowledge, skills, and expertise that no single health care discipline or system alone can provide. It is likely that in addition to Modern Medicine, synergistic application of different other pathys and therapies like Ayurvedic, Homeopathy, Unani, Siddha and many other physical therapies like Physiotherapy, Yoga, Movement therapy, Dance therapy and even Music and Drama therapy, Diet therapy and Psychotherapy will be required for comprehensive Elderly care. Furthermore, these health care professionals and other allied therapists also may use the resources of other providers through consultative relationships. From this broad-based collaborative arrangement among health care professionals and other allied therapists, the concept of the interdisciplinary geriatric care has developed, which bring together health providers from a variety of disciplines to assess, treat, and monitor the health status of elderly patients with multiple, complex, interacting problems. This requirement has increased further this COVID time

Dr. Dhiresh Kumar Chowdhury, Chief Functionary, Banchbo Healing Touch, Asst. Secretary, GSI WB, Geriatrician moderated the session.

Mr. Amal Sarkar, Chief of the News Bureau, Eisamay and Mrs. Ruma Chatterjeen, Chapter Head, Dignity Foundation, Kolkata attended the webinar as Guests.

The panellists were Dr. Kaushik Ranjan Das, President (Elect.) Geriatric Society of India, Geriatrician and Family Physician Consultant, Dr. Kaushik Mazumder, Vice

Chairman, GSI WB, Senior Consultant Geriatrician, Dr. Rivu Basu, Asst. Professor, Community Medicine, R. G. Kar Medical College, Dr. Achintya Mitra, Senior Consultant Ayurveda Specialist, National Research Institute of Ayurvedic Drug Development, Ministry of Ayush, Govt. of India, Kolkata, Dr. Ashoke Dhali, Senior Homeopath Consultant and HOD, Sanjeevan Hospital, Dr. Ujjwal Ghosh, Member, Naturopathy Council, Govt. of West Bengal, Consultant Yoga and Naturopathy Specialist, Ms. Sahely Gangopadhyay, Consultant Clinical Psychologist and Psychotherapist, AMRI.

At first, Dr. Dhiresh Kumar Chowdhury welcomed all the panellists, distinguished guests and participants of this webinar as Moderator and in his inaugural speech he pointed out important reflection of some recent studies related to the webinar. He said that in recent surveys it is observed that many senior citizen practices self-medication of CAM by own decision or suggested by the friends and relatives. Alarming less than 20% of seniors only take such medication under the supervision of qualified doctors. Even many of them don't know indications, dosage and about adverse effects and chances of drug interactions. For betterment and to avoid preventable complications of such practices it should be stopped immediately and thus collaboration of different pathy is highly needed as soon as possible.

Dr. Kaushik Ranjan Das narrated importance of collaborative approach and formatting common minimum programme to make a group with emphasis in community medicine. He also suggested for establishment of a Federation by the engagement and active participation of doctors from different pathy.

Dr. Kaushik Mazumder advised Multidisciplinary holistic approach for the comprehensive care of senior citizens. He also pointed out the necessity of engaging RMPs often called as quack doctors, who are serving the large population of villages and semi urban areas of our state and bring them in main stream by proper training specially for the benefits of marginalized seniors in remote and unreachable areas.

Dr. Achinta Mitra informed about the ongoing advance research on Ayurveda with Modern Medicine under the guidance of Ministry of Ayush, Government of India in different premier organization like AIIMS and BHU and also at NRIADD, Kolkata. He said that Ayurvedic treatment now has most modern approach after lot of scientific advancement and research in last few decades. He also emphasized on the necessity of the formation of federation for common benefits and benefits of large elderly population.

Dr. Ashok Dhali highlighted the success of homeopathy in the treatment of various chronic diseases and urged all to consider the need for coordinated treatment for its joint application.

Dr. Ujjwal Ghosh highlighted the benefits of yoga as well as the scientific combined application of such with modern medicine and said that a naturopathy and yoga hospital is being set up in Howrah, West Bengal and highly appreciated the fact that a section of modern medicine practitioners are recognizing the treatment of other pathys.

Dr. Rivu Basu emphasized data and evidence based treatment of all ailments in any mode of treatment and therapy and also emphasized on joint coordination treatment in the field of Universal Health approach, which is the actual goal of WHO.

Clinical Psychologist Smt. Saheli Gangopadhyay emphasized the importance of psychotherapy and

counselling in the treatment of the elderly and its need for further consideration, including the need to include family members in their comprehensive treatment.

ALL THE PANELLISTS AGREED UPON THE NEED OF-

1. Geriatric oriented special training of all healthcare personnel of different pathy.
2. Multi-Disciplinary Collaborative Approach.
3. Preparation of a Protocol for Geriatric treatment and following the protocol.
4. Periodic meeting / webinar to make an effective platform to combined effort.
5. Approach for a umbrella foundation for Comprehensive Geriatric care.
6. Involvement of community and local clubs for taking care of the senior citizen in local level.
7. Regular liaison with Government health sector and other service providers.

Many senior members of the Life and Dignity Foundation participated in the discussion through live broadcasts on social media and YouTube.

Dr. Kaushik Ranjan Das conclude the webinar after giving thanks to all and hope that in the near future, everyone will have the opportunity to meet together again.

To watch on YouTube please visit the link -

COVID-19 Training Programme

Report by Dr. Kaushik Ranjan Das & Dr. Krishnanjan Chakraborty

It has been observed here in West Bengal that one very important cause of mortality among COVID 19 patient is late arrival of home isolated patients at dedicated COVID hospitals' main reason behind the situation is less efficient chain of communication between patients and health care providers. Looking at this, the Department of Health Govt. of West Bengal in collaboration with IMA Bengal State branch and API organized a training programme (doctors training is a part of it) to train doctors and other related, regarding management of home isolated COVID 19 patients to make a chain of communication between patients' doctors and health administration ; so that' treatment' monitoring and referral of appropriate cases be undertaken in hassle-free way following the protocol of management being laid down by the department of health with the help of experts. Since

IMA has branches spread all over and has functioning committees - local branches will act as a point of coordination.

Programme: Being requested by concerned authority, Geriatric Society of India West Bengal branch has organized a Web training on 08.11.2020 (Sunday) at 05 pm. 26(twenty-six) GSI members (including Dr. Chinmay Kumar Maity, Chairman, GSI WB branch) have joined the training; Dr. O. P. Sharma' Respected General secretary of GSI has attended as special guest and Dr. Jyotirmoy Pal, Vice President, API, has attended as expert on behalf of Department of Health.

Dr. Kaushik Ranjan Das being the speaker deliberated and explained different points of the management protocol, following which an interactive Q/A session has been conducted; experts been there are-Dr. Santanu Tripathy (Prof.

and HOD Clinical Pharmacology, STM' Kolkata, Dr. Chranjib Bagchi and Dr. Shambhu Samrat Samajder. Following a point raised by Dr. Jyotirmoy Pal; Dr. O.P. Sharma assured GSI participation and support in related matters in coming days, he also emphasized the need of collaborative approach in the field of health care.

Salient features of the training protocol described are - Symptoms of COVID19, whom and when to test', test

modalities' selection criteria's for home isolation', admission at safe home and admission at dedicated COVID19 hospital' important laboratory tests and interpretation' warning signs, criteria for referral for admission, isolation and quarantine periods' followup and ways of coordination etc.

Whole session has been moderated by Dr. Krishnanjan Chakraborty, General Secretary' GSI West Bengal branch.

News from Vijayapura

Vaccination Program

Report by Dr. Anand P. Ambali

Vaccination Program - The geriatric Clinic and Anand Hospital had organized month long immunization campaign for senior citizen. Vaccine against Influenza was administered to 50 senior citizens.

Immunization against Influenza in Senior Citizen is being organized @ Anand Hospital. Thank you all the seniors who got their shot of Vaccine. Series-1. This vaccine is recommended to all the senior citizens to prevent pneumonia due to Influenza. It is highly recommended for the seniors who are living with Diabetes, Renal failure, liver failure, Dementia, COPD, Malignancy, & Cardiac Failure.



Immunization against Influenza in Senior Citizen is being organized @ Anand Hospital. Thank you all the seniors who got their shot of Vaccine. This vaccine is recommended to all the senior citizens to prevent pneumonia due to influenza. It is highly recommended for the seniors who are living with Diabetes, Renal failure, liver failure, Dementia, COPD, Malignancy, & Cardiac Failure. 2nd in series this month.



Recommended by World Health Organization, CDC, ICMR, & Geriatric Society of India

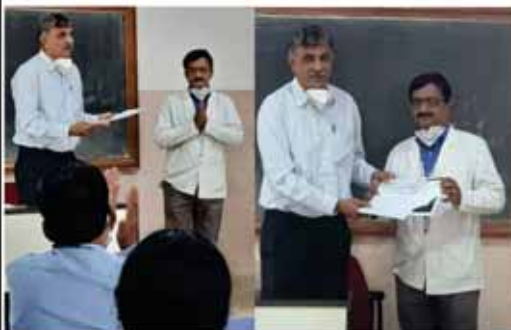
Recommended by World Health Organization, CDC, ICMR, & Geriatric Society of India

Congratulation

Dr Anand P. Ambali was invited faculty for webinar to commemorate International day for older people on 01/10/2020 by Yenepoya Nursing college, Mangalore.

Certificate of Commendation

Thanks to BLDE Association, BLDE DU and Shri B. M. Patil Medical College Hospital & RC for this recognition.



Thanks to the Principal Dr. Aravind Patil Sir, for presenting Certificates and Cheque & Dr. M. S. Biradar Sir, Hon. Vice Chancellor for his support.

Dr. Anand P. Ambali Geriatric Clinic was awarded Certificate of commendation by BLDE Association & BLDE Deemed to be University in recognition of his academic and community activities for senior citizen and bringing laurels to the University.

Health Check-up Camp for Senior Citizens

In fond memory of



Late Dr. Premanand M. Ambali

**Anand Hospital
Vijayapura**



**NSS Wing. S B Arts &
KCP Science College**

**Gram Panchayat'
Arjunagi**

The mega health check-up and screening camp was organized at ARJUNAGI on 23/10/2020

The camp was organized in collaboration with gram panchayat Arjunagi NPHCE, Anand Hospital & NSS Wing of S B Arts and K C P Science College to commemorate death anniversary of Late Dr. Premanand M Ambali, a mega health check-up and screening camp was organised and the program "reaching the unreached" was launched in Arjunagi village on 23/10/2020 between 10.00 am to 3.00pm.

The program was inaugurated by Dr. M. M. Kapase DHO, the

oldest person of Arjunagi Mr N. S. Hukkeri who is 97 years old. Shri Mr K G Desai of Arjunagi and Dr M B Biradar DSO were guests of Honour.

Appreciating this event by NGO, Dr. M. M. Kapase said his department will provide complete assistance to this unique program through National Program of Health Care of Elderly (NPHCE). Conveying his happiness and proud moment Shri N. S. Hukkeri blessed the program. Shri. K. G. Desai affirmed all the support and urged the people to make use of health services rendered at gram level. Dr Y S Pujar, of S B Arts and



KCP Science College said his NSS team will volunteer for this program. The Gram Panchayat of Arjunagi has agreed to allow utilizing their premises for camp purpose hereafter.

A book which was recently released by Government of India on “Fitness in senior citizens” was released and distributed among the senior participants.

Dr. Suresh Ambali Vice principal of KCP Science college welcomed the gathering'. Dr. A. P. Ambali, Geriatric Physician addressed the gathering and share the importance of preventive aspects for senior citizens, he also briefed the warning signs that the seniors should never neglect and seek to consult doctor immediately for new symptoms. He also emphasized the utility of Dementia Clinic and Immunization clinic at BLDE DU, meant exclusively for senior citizens.

Dr. Niranjan Golageri, Dr. Santhosh B.T, Dr. Chirag Sajjanar, Dr. R C Kartik, Dr. Shruthi M, Dr. S Indumati, Dr. Aniyandhu Dr. Priyanshu Maurya, Mr Sudhakar, Mr Shrishail Kumbar, Mr Shivappa Natikar, Mrs Savitri J, Mr. C. R. Ambali, Mr Umakant Tadake and technical staff from DSO were actively involved in screening and treating the patients.

A total of one hundred senior citizens took part in the camp. They were screened for Diabetes, Hypertension, Heart diseases, cataract, hearing loss and joint disorders and were provided treatment there itself by specialists. In the camp new cases of hypertension, cataract and diabetes were detected for the first time. The painful part was uncontrolled levels of sugar and blood pressure were found in those already taking medicine because they did not do follow up. The commonest disease we found in the elderly who attend camp was in the following order-osteoarthritis of knee joint, hypertension, diabetes mellitus and anemia.

The patients who require further evaluation was referred to BLDE HOSPITAL.



All 92 patients were examined by the specialist doctors from general medicine, geriatric medicine, ophthalmology, otolaryngology and orthopedics.

The NPHCE carried out random blood sugar test in all the patients

Blood pressure and ECG was recorded of the patients.

Required drugs for one month duration was provided free of cost to all the patients.

Dr M S Biradar, Vice Chancellor of BLDE DU. Dr Aravind Patil Principal & Dr Rajesh Honnutagi, Medical Superintendent of Shri B M Patil Medical College Hospital & RC had supported and provided all the logistics support to the program. Dr Aravind Patil Principal said here after specialist will visit the village once a month to provide follow up services.

Breakfast and lunch was provided to all the doctors, nursing staff and technician who participated in the camp.

News from Pune

Jehangir Hospital-the first Corporate Hospital in Pune to start dedicated Geriatric Services

Report by Dr. Sandeep Tamane

Jehangir Hospital, a well-known multi-specialty hospital in Pune, has recently started dedicated Geriatric services.

Chairman of the Pune Chapter of Geriatric Society of India, Dr. Sandeep Tamane has been appointed as a Senior Consultant in Geriatric Medicine at Jehangir Hospital and will be responsible for developing the Geriatric services at the Hospital.

Online Inauguration of the services was held on Sunday 29th November 2020, followed by online CME on Geriatric Medicine.

Program began with Welcome addresses from Mr. Vinod Sawantwadkar, CEO; Dr. S.S. Gill, Medical Director and Dr. Sandeep Tamane.

Need for developing the dedicated Geriatric services and the services offered by Jehangir Hospital in the Geriatric Clinic were discussed.

This was followed by blessings from Professor P.S. Shankar Sir (Patron, GSI) and Dr. O. P. Sharma Sir (Secretary, GSI).

CME held thereafter included 3 talks-

1. Introduction and Principles of Geriatric Medicine by Dr. O.P. Sharma Sir.
2. Sarcopenia and Frailty by Professor P.S. Shankar Sir.
3. GI bleeding in Elderly by Professor Basant Chaudhury



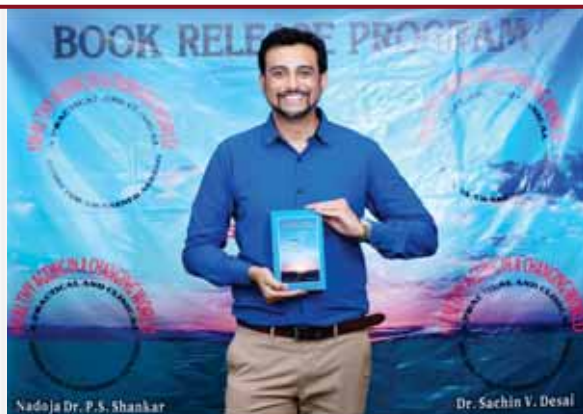
Sir, a Senior Gastroenterologist from U.K.

Program was compered by Dr. Radhika Patil, HOD of Physiotherapy at Jehangir Hospital.

Jehangir Hospital is the first Corporate Hospital in Pune to start dedicated Geriatric services and we look forward to further expand and strengthen our services in future for the benefit of our Seniors.

Congratulations

*Dr. Sachin Desai
for your book on
"Healthy Ageing in a
Changing World"*



Book Review by Dr. P. S. Shankar

P.S. SHANKAR

Health ageing in a changing world, A practical Guide for Awakened ageing. P S Shankar, Sachin Desai (Editors), Bagalkot. Sachin Desai, Pages xxiv + 482, Price: Rs 500

The book on 'Healthy ageing in a changing world' is a practical and clinical guide for awakened ageing. It contains 2 sections each with 23 and 20 articles on different aspects for awakened ageing. The book has come out at a time when the results on the longevity in India have been published in the Lancet recently. During the course of 30 years India has gained a decade of life expectancy from 59.6 years in 1990 to 70.8 years in 2020. This is really a happy thing and we are proud we are living long. But there is a catch. Healthy life expectancy in India has not been as dramatic as the growth of people's life expectancy. The reason is People are living more years in illness and disease.

In this background the publication of awakened ageing, a theme conceived and executed by Dr Sachin Desai is a laudable one. It has been produced as a reference book for use by the Medical Practitioners treating elderlies. It is also useful to the care givers. The writers have been drawn from different parts of the country, and Netherlands.

The book contains articles on a variety of topics such as active ageing, stress management, loneliness, adult immunization, various disorders affecting different systems and organs, and end of life care. The authors who have strived to give an in-depth knowledge on various disorders affecting elderly, and have given tips on the art of living and have stressed good health adds life to years.

The elderly persons are national asset who have contributed for the growth of the Nation and for development of the family. In advancing years, these

persons find difficulty to generate income, and become increasingly vulnerable to illness and disability, and become dependent on their families. They should not be considered a burden. The Society must take pleasure in supporting them.

The rapid strides in the medical science, have enabled a steady increase in human life expectancy. The implications are that ageing is becoming a matter of concern because of the rapidly growing number older persons putting enormous pressure on health care services. Our aim is to take care of them through separate clinics and hospitals catering to their needs. If it is done with all seriousness, old age becomes a happy state in the life of every individual. Ageing as Betty Friedan has told, 'is not lost youth, but a new stage of opportunity and strength'. We have to strive to make them show features of positive ageing. Successful ageing, then becomes giving to others with joy, and receiving it gratefully during needs.

Since ageing appears to be the only available way to live a long time, and the number of geriatric persons is on increase in the country, there is an urgency to address the health issues of this growing mass of population as a separate segment. In this background production of a book on healthy, and awakened ageing is welcome.

The first part of the book has elaborate description on active ageing, demographic transition, healthy life styles, adult immunization, elder abuse, life beyond 100 years, and other articles. The second part deals with various diseases that affect different systems of the body and their management. The book could have been divided into two separate books. The book contains a wealth of information which can be utilized by the practitioners taking care of elders. The book is recommended for all care-givers of elderly persons.

*Emeritus Professor of Medicine, SCEO, KBN Teaching Hospital, Kalaburagi

News from Headquarter
Certificate Course in
Geriatric Medicine & Gerontology (Online Course)
By Geriatric Society of India®

In association with

Khaja Bandanawaz University, Kalaburagi

October 2020 – December 2020

Patrons – Dr. P. S. Shankar, Dr. V. K. Arora, Dr. B. C. Bansal

President – Dr. Prabha Adhikari

Chief Editor – Dr. O. P. Sharma

Editors – Dr. Anand Ambali, Dr. Sandeep Tamane, Dr. Kaushik Ranjan Das

The following topics were covered

TOPICS

Topic	Name of Faculty	Topic	Name of Faculty
Introduction & Theories of Ageing	Dr. O. P. Sharma	Enlarged Prostate	Dr. Satish Tembe
Immunization	Dr. Kaushik Ranjan Das	Incontinence	Dr. Rajesh Taneja
Clinical Approach to Older People	Dr. Anand P. Ambali	Seizures	Dr. Bindu Menon
Sarcopenia/Frailty	Dr. P. S. Shankar	Delirium	Dr. Anita Nambiar
Comprehensive Assessment	Dr. Pratibha Pereira	Syncope	Dr. Bindu Menon
Warning Signs (Acute Illness)	Dr. Shubhangi Kanitkar	Stroke	Dr. Kausik Majumdar
Anaemia	Dr. Pradnya Mukund Diggikar	Approach to Alzheimer's Disease	Dr. Bappaditya Chowdhury
Infections	Dr. Shilpi Khanna	Movement Disorders	Dr. Prabha Adhikari
Dental Problems & Oral Care	Dr. Kamal Shigli	Approach to Falls	Dr. Prabha Adhikari
Ischaemic Heart Disease	Dr. Anil K. Manchanda	Osteoarthritis	Dr. Amit Gupta
Hypertension	Dr. Sandeep Tamane	Age Related Back Problems	Dr. Seema Grover
Cardiac Failure	Dr. Amitesh Agarwal	Common ENT Problems	Dr. Kalpana Nagpal
COPD	Dr. Nikhil Sarangdhar	Common Eye Problems	Dr. Pradnya Mukund Diggikar
Pneumonia	Dr. K. Anupama Murthy	Pressure Sores	Dr. Anand Mahipati Kamat
ILD	Dr. Puneet Khanna	Sleep Disorders	Dr. S. Ramanathan Iyer
Pulmonary Tuberculosis	Dr. V. K. Arora	Home Health Care	Dr. Arun Bhatt
Constipation	Dr. Yogesh Batra	Poly Pharmacy & Safe Drugs	Dr. Sandeep Tamane
GI Bleed	Dr. Soumik Ghosh	Palliative Care	Dr. K. B. Lingegowda
Jaundice	Dr. Chinmay Kumar Maity	Thyroid Disorders	Dr. J. K. Sharma
Diabetes	Dr. M. V. Jali	Health Promotion	Dr. Sachin Desai
Osteoporosis	Dr. Anita Basavaraj	Assistive Devices	Dr. S. V. Kulkarni
Acute Kidney Injury	Dr. Sajesh Asokan	Andrapause	Dr. Dheeraj Kapoor
		Depression	Dr. Kauser Usman
		Elder Abuse	Dr. Anand P. Ambali

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