

A STUDY OF METABOLIC PARAMETER AND MORBIDITY PROFILE AMONG ELDERLY POPULATION IN RURAL COASTAL ANDHRA PRADESH

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ABSTRACT

Global population ageing is an important challenge and opportunity faced by all countries. With advances in medicine helping more people to live longer lives, the number of people over age 60 years is expected to double by 2050 and will require radical social change according to a new report released by the WHO for the international day. Present study is designed to evaluate metabolic parameter and morbidity profile in elderly people in rural coastal Andhra Pradesh; 30% of male and 31% of the female was diabetic; 26.4% of the male and 37.5% of the female was having osteoarthritis; 41.18% of the male and 37.5% of the female have acid peptic disease; 10.1% of male and 12.75% of the female have ischemic heart disease. So it is required to provide promotional, preventive, curative and rehabilitative services in an integrated manner for the elderly.

KEYWORDS

Metabolic parameter, Morbidity profile, Elderly.

HOW TO CITE THIS ARTICLE: Shakeela D, Babu RP. A study of metabolic parameter and morbidity profile among elderly population in rural coastal Andhra Pradesh. J. Evid. Based Med. Healthc. 2016; 3(7), 218-220. DOI: 10.18410/jebmh/2016/51

INTRODUCTION: Global population ageing is an important challenge and opportunity faced by all countries. With advances in medicine helping more people to live longer lives, the number of people over age 60 years is expected to double by 2050 and will require radical social change according to a new report released by the WHO for the international day.⁽¹⁾ According to census 2001, older people were 7.7% of the total population which increased to 8.14% in census 2011 the projections for population over 60 years in the next four census were 133.32 million (2021), 178.59 (2031) 236.01 million (2041) and 300.96 million (2051).^(2,3) The expectancy of life has increased during the year 2011–2016, but irrespective of socioeconomic status, the non-communicable diseases requiring large quantum of health and social care are extremely common in old age.⁽⁴⁾ As the elderly population is increasing in India, so there will be a shift in disease pattern from communicable disease to non-communicable disease and the health system should prepare itself for growing needs of the elderly population. Systemic consequences of aging are wide spread, but can be clustered into four main domains: 1) Body composition 2) Balance between energy availability and demand 3) Signalling network that maintains homeostasis 4) Neurodegeneration.⁽⁵⁾ Present study is designed to evaluate metabolic parameter and morbidity profile in elderly people in rural coastal Andhra Pradesh.

MATERIAL AND METHOD: This study is a prospective study conducted in rural part of East Godavari district in Rangaraya Medical College from Dec 2014 to December 2015. Before start of study permission from Institutional Ethics Committee was obtained. Written consent was also

obtained from the patient and their relative in two languages. One hundred persons who were co-operative till completion of study were included in the study. The data was collected by an interview schedule that was designed before start of the study. The pre-designed and pretested questionnaire used which was approved by Institutional Ethics Committee. The diagnosis of the disease was based on clinical evaluation diagnosis and treatment done earlier and available ECG and investigation report. HbA1c was estimated by spectrophotometry. Fasting blood sugar was estimated glucose oxidase method. HDL was estimated by precipitation method. Serum cholesterol was estimated by ZAK method. LDL was estimated by W.D. Friedewald, R.I. Lavya and D.C. Fredericton and TG were estimated by Debnath modification of Neri and Frienge.

RESULT: Out of one hundred people 70% were between 60 to 70 years of age, 25% were between 70 to 80 years of age, only 5% of the people were more than 80 years of age, 68% of the people were male, rest were female.

Out of 68 males 59% of persons have BMI below 25, 24% have BMI in 25 to 30 range, but rest has BMI more than 30. Among 32 females 82% were having BMI below 25, rest having BMI in 25 to 30 range.

A 60% of study population were low socio-economic status and rest 40% were having middle socio-economic status. All were married, 10 out of 32 and 38 out of 68 females and males respectively were widow and widower; 34% of people were vegetarian.

Out of 68 males 20 have alcohol and 30 have tobacco consumption habit and among 32 females 10 have tobacco and 2 have alcohol consumption habit; 18% were illiterate, 48% have education up to primary level, 25% have up to secondary level and 9% were graduates.

From Table 2 it is clear that 40% of the population under study was normotensive, 20% of the population have blood pressure high normal (14 males and 6 females) 12 people have BP grade I, (10 males and 2 females), similarly

Submission 12-01-2016, Peer Review 13-01-2016,

Acceptance 22-01-2016, Published 23-01-2016.

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DOI: 10.18410/jebmh/2016/51

12 people have BP grade II with 10 males and 2 females. Total six have blood pressure grade 3.

As per Table 4 is clear that mean fasting blood sugar in female was 91.46mg/dl and male it was 90.16mg/dl. Glycosylated haemoglobin was 5.81 in male and 5.66 in female. Mean LDL concentration was 104 and 106.4mg/dl respectively in male and female. HDL cane was male and female than male that is 43 and 41.86 respectively. Mean serum cholesterol concentration was 189mg/dl in male and 178mg/dl. TG concentration was 186mg/dl in male and is 160mg/dl in female.

Correlates	Sex	Specification	No. of participant
Age		60 to70yrs	70
		70 to 80yrs	25
		>80yrs	5
Sex	M		68
	F		32
BMI	M	<25	40
		25 to 30	16
		>30	2
	F	<25	26
		25 to 30	6
		>30	0
Socioeconomic status		Low	60
		High	40
Married			100
Unmarried			0
Widow			10(32)
Widower			38(68)
Diet		Non-veg	66
		Veg	34
Tobacco	M	Present	30
		Absent	38
	F	Present	10
		Absent	22
Alcohol	Male	Present	20
		Absent	48
	Fem ale	Present	2
		Absent	32
Education		Nil	18
		Primary	48
		Secondary	25
		Graduate	9

Table 1: Correlates of elderly population

As per Table 3, it is clear that 30% of male and 31% of the female were diabetic; 26.4% of the male and 37.5% of the female were having osteoarthritis; 41.18% of the male and 37.5% of the female have acid peptic disease, 10.1% of male and 12.75% of the female have ischemic heart disease. Anaemia was common in female than male, that is 37.5% and 14.7% respectively; 12% male and 18% female have constipation. Bronchial asthma was also common in female than male; 30% of male and 46.8% of female have COPD.

Prevalence of cataract was same in both sexes, that is 23.5% and 25% respectively. Depression was same in both sexes.

	Total	Male	Female
Normal	40	30	10
High normal	20	14	6
Grade 1	12	10	2
Grade II	12	10	2
Grade III	6	4	6
Total	100	68	32

Table 2: Blood pressure in elderly people

Common Diseases		Frequency	%
Diabetes mellitus	M	20(68)	29.41
	F	10(32)	31.25
Osteoarthritis	M	18(68)	26.4
	F	12(32)	37.4
APD(acid peptic disease)	M	28(68)	41.1
	F	12(32)	26.4
IHD(ischemic heart disease)	M	10(68)	14.7
	F	4(32)	12.5
Anaemia	M	10(68)	14.7
	F	12(32)	26.4
Constipation	M	8(68)	11.76
	F	6(32)	18.75
Bronchial Asthma	M	8(68)	11.76
	F	6(32)	18.75
COPD	M	10(68)	14.7
	F	8(32)	25
Cataract	M	16(68)	23.5
	F	8(32)	25
Depression	M	8(68)	11.76
	F	4(32)	12.76

Table 3: Morbidity profile among elderly

Parameters	Male	Female
FBS →	90.16(mg/dl)	91.46(mg/dl)
HBA1C →	5.81	5.66
LDL →	104(mg/dl)	106.4(mg/dl)
HDL →	41.86(mg/dl)	43(mg/dl)
Chol →	189(mg/dl)	178(mg/dl)
TG →	186(mg/dl)	160(mg/dl)

Table 4: Metabolic parameter in elderly

DISCUSSION: In our study it has been found that 40% of the popular have normal blood pressure, rest have various grade of hypertension which is as per the study of Nag T Ghosh, et al.^(6,7) Most common disease was hypertension followed by others like Diabetes mellitus 30% and 31%, osteoarthritis 26.4% and 37% anaemia was also common also as per the study of other authors.^(8,9) Regarding metabolic profile mean fasting blood sugar and glycosylated haemoglobin of the people was in normal range, serum cholesterol and serum triglycerides concentration was towards higher side according to the study of Anoop Sharma et al. Dyslipidemia varies in various population in rural India,

prevalence of Dyslipidemia is less than the urban but recent trend is the increased Dyslipidemia in rural population also.^(10,11,12)

COPD prevalence was also high in our study because of smoking habit among elderly in our area, even though pollution is not that significant, but it varies in different part of India, it varies in range 3% to 8% in general population.^(13,14) In our study it is also found that depression is equally present in both sexes. Prevalence of depressive symptoms varied from 13.5% to 36.8% in community dwelling older adults. Some other studies have revealed that the prevalence rates for depression in community samples of elderly in India vary from 6% to 50%.^(15,16) Large-scale studies are needed for a better picture of mental health in rural older adults in India.

CONCLUSION: The unprecedented increase in human longevity in 20th century has resulted in the phenomenon of population ageing all over the world. Countries with large population such as India have large number of people now aged 60 years or more. The population over the age of 60 years has tripled in last 50 years in India and will relentlessly increase in near future. In 2001 the proportion of older people was 7.7% which will increase to 8.14% in 2011 and 8.94% in 2016. So it is required to provide promotional, preventive, curative and rehabilitative services in an integrated manner for the Elderly. Prevalence of depressive symptoms varied from 13.5% to 36.8% in community dwelling older adults. Some other studies have revealed that the prevalence rates for depression in community samples of elderly in India vary from 6% to 50%.

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