

Dietary Non Nutrients Posing Health Hazards

Avinash Shankar^{1*}, Amresh Shankar² and Anuradha Shankar³¹Chairman, National Institute of Health and Research, Bihar, India²State Health Services, Bihar, India³Director, Centre for Indigenous Medicine and Research, India***Corresponding Author:** Avinash Shankar, Chairman, National Institute of Health and Research, Bihar, India.**Received:** December 09, 2018; **Published:** January 18, 2018**Abstract**

Incidence of diseases like Diabetes mellitus, Myxoedema, Urolithiasis, Cholelithiasis and hypertension are increasing progressively even among down trodden, hard working and economically deprived persons. A mass screening program was conducted in 20 villages of Warisaliganj block of Nawada district of Bihar which reveals the increasing incidence of metabolic and endocrinal disorders at par with urban population and the common factor among urban and rural life conditions, which are fortify and decrease the nutritional value of dietary constituents due to the excessive use of chemical, fertilizer, pesticide and preservatives. Another important factor, is the changed life style and wellness due to the generated toxic constituents which alter the endocrinal and metabolic process of the body.

Keywords: Diabetes Mellitus; Myxoedema; Urolithiasis; Cholelithiasis; Hypertension Fortified Endocrine; Metabolism

Introduction

Worldwide attitude to grow more and live lavishly, posing financial encumbrance, but to intent to grow more, soil is then routinely fortified with fertilizers, chemicals, insecticides, pesticides and other processing material which are used to increase fertility and crop yield. However, these substances generate the deposition and accumulation of toxic chemical in the soil, which are ultimately get transmitted through crop yield, poultry, vegetables and fruit, leading thus, to altered enzymatic function, digestion and metabolic process due to competitive inhibition of various enzymes, hormones and immunological process [1].

Use of growth hormones, steroid and various enzymes causes inhibition of the hormone receptors and ultimately manifest as increased incidence of metabolic, endocrinal disorders, lithogenesis and oncogenesis [2-5].

Considering the fact to ascertain disease diversity, different population were screened clinically and pathologically, in order to ascertain their glycaemic, renal, hormonal and cardiovascular status.

Aims and Objectives

The main objective of the present work was to evaluate the randomly selected population for reasons of increasing incidence of metabolic and endocrinal disorders by a combined venture of RA. Hospital and Research Centre Warisaliganj (Nawada) Bihar and Aarogyam punarjeevan, Ara Garden Road, Jagdeopath, Baily Road Patna 14.

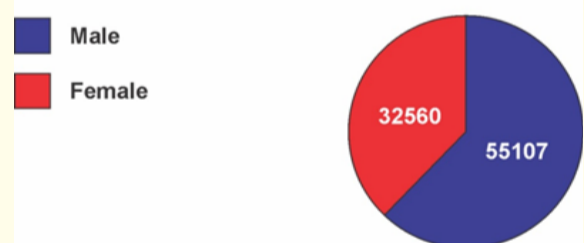
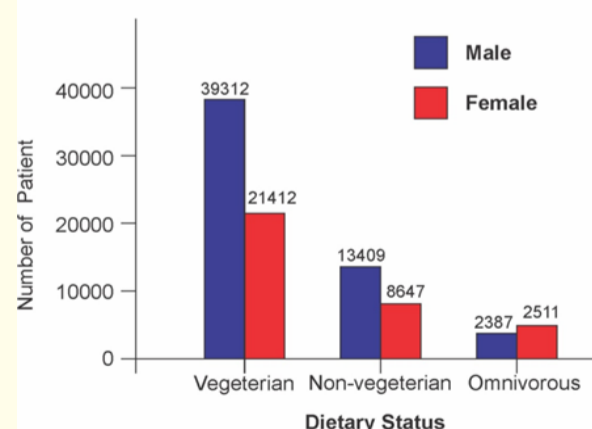
Material and Methods

For the proposed study 20 villages of Warisaliganj block of Nawada district Bihar were selected and persons between the age group of 25 - 45 years, both male and female. The human subjects were duly interrogated for their personal history, nature of work, economic status, clinical status by measuring body weight and blood pressure, blood sugar, Serum TSH, Serum cholesterol, Serum creatinine, blood urea and urine crystal. Ultrasonography of abdomen was also monitored.

Study period: During January 2016 to September 2017.

Observations

Among the 87673 screened persons from different villages (Table 1) of varied age and sex (Table 2), 55113 (62.9%) and 32560 (37.1%) were male and female respectively (Pie diagram). Of the total sample population (71.2% male and 65.7% female) were vegetarian, while 2.38% male and 7.7% female were carnivorous respectively. See through bar diagram; 34.9% male and 32.6% female were hard worker while all together 28.5% and 56.2% female were house hold worker; 5.97% were having sedentary life style (Table 3).

Pie diagram for Male Female composition**Bar diagram for Dietary Status**

Villages	Number of persons examined		Total
	Male	Female	
Mafi	2190	1740	3930
Simri Dih	3104	2209	5313
Simri Bigha	1012	0688	1700
Kochgaon	4217	2128	6345
Chakwai	3057	1924	4981
Baghi	2016	1097	3113
Dhanbigha	2104	1604	3708
Mahadipur	1004	0629	1633
Sonbarsha	1929	1117	3046
Balbapar	0848	0429	1277
Khanapur	2113	1324	3437
Makanpur	4420	2190	6610
Murlachak	2206	1029	3235
Chirayan	3070	1428	4498
Kutri	4215	2094	6309
Daryapur	3076	1918	4994
Korma	4070	2913	6983
Mirbigha	3087	1910	4997
Sambey	3905	1899	5804
Thera	3470	2290	5760

Table 1: Population covered.

Age group (in years)	Number of patients		Total
	Male	Female	
25 - 30	16442	9439	25881
30 - 35	11319	7215	18534
35 - 40	17717	9191	26908
40 - 45	09625	6715	16340

Table 2: Age and sex wise distribution.

Particulars	Number of patients		Total
	Male	Female	
House hold work	6712	18302	25014
Job oriented work	9490	02119	11609
Hard worker	19215	09402	28617
Private service	06290	00709	06999
Government service	02112	01389	03501
Sedentary life	04978	00229	05207
Business	06306	00410	06716

Table 3: Distribution as per nature of life.

Out of all 42400 (26200 male and 16200 female), 48.4% were illiterate, while 297 were professionals; 3396 male and 1627 females were graduate; and above i.e. all together 5.7% were graduate and over graduate (Table 4). Out of all 18% male and 4.4% female were with ideal body weight, while 87.5% female and 35.3% male were overweight; 46.7% male and 8.1% female were of low body weight (Table 5).

Qualification	Number of patients		Total
	Male	Female	
Illiterate	26200	16200	42400
Can sign only	9825	5173	14998
Read and Write	8549	7542	16091
< 10 th	6845	2009	8854
Graduate	3196	1529	4725
> Graduate	200	98	298
Professional:			
ITI	222	-	222
Diploma	17	09	26
Practitioners	49	-	49

Table 4: Distribution as per educational status.

Body weight	Number of persons		Total
	Male	Female	
IBW	09876	01427	11303
IBW+SD	19463	28497	47960
IBW-SD	25764	02636	28400

Table 5: Distribution as per body weight.

Key: IBW: Ideal Body Weight; SD: 5kg; IBW+SD: Over-weight; IBW-SD: Low Weight

Among the screened patients presented with varied complaints (Table 6); 19908 were hypertensive and 4.5% were of malignant hypertension needs due investigation and urgent treatment (Table 7).

Particulars	Number
Asthenia	45,780
Heaviness in the body	40,664
Lethargy	45,780
Leg cramp	50,200
Diabetic triad	2,357
Urinary urgency	2,600
Pain in abdomen	
Upper abdomen	8,440
Lower abdomen	12,640
Burning in micturition	3,400
Eructation	48,480
Hair fall	14,600
Vertigo	40,312
Headache	19908

Table 6: Common presentation.

Average basal blood pressure (in mm Hg)	Number		Total
	Male	Female	
< 80	4106	11021	15127
80 - 100	15153	14176	29329
100 - 120	20487	2812	23299
120 - 130	9125	1251	10376
130 - 140	3842	1780	5622
> 140	2390	1520	3910

Table 7: Distribution as per basal blood pressure.

The 4.3% of the screened population showed fasting blood sugar > 200 mg%; among them 4.3% were male. Among persons with FBS > 200 mg%, 61.7% were male and ca. 5.28% were between 35 - 45 years old; 65.46% were with FBS < 100 mg% and 20.3% were diabetic (Table 8).

Among the screened persons, 6.5% were suffered from hypothyroidism with TSH > 5.5, while among female that percentage was 17.2%. What is of great interest, is that 48% female and 44.4% male showed pre-hypothyroid state with TSH level 0.5 - 5.5, while the majority (47.6%) of the investigated persons showed TSH < 0.5 (Table 9).

Blood sugar (in mg%)	Number of persons							
	25 - 30		30 - 35		35 - 40		40 - 45	
Age in years ----->	M	F	M	F	M	F	M	F
< 100	11540	6029	7050	3715	13605	5312	6222	3946
100 - 120	1042	1144	1930	1709	2164	1605	1441	1412
120 - 140	649	390	498	240	405	231	201	203
140 - 160	947	625	315	521	422	327	401	205
160 - 180	945	736	270	287	305	496	699	429
180 - 200	926	402	342	421	206	407	209	304
> 200	413	113	914	328	610	804	412	216

Table 8: Distribution as per fasting blood sugar.

Blood sugar (in mg%)	Number of persons								Total
	25 - 30		30 - 35		35 - 40		40 - 45		
Age in years ----->	M	F	M	F	M	F	M	F	
< 0.5	13536	4164	4834	2598	8696	2803	3318	1712	41700
0.5-5.5	2840	3672	6472	3942	8992	4261	6192	3812	40183
5.5-10.5	07	459	04	178	09	985	25	713	2380
10.5-15.5	15	325	07	182	11	612	17	212	1381
15.5-20.5	20	329	02	213	07	319	29	149	1068
>20.5	24	490	-	102	02	211	14	108	951

Table 9: Distribution as per TSH level.

Routine examination of Urine revealed the presence of RBCs and Oxalate crystals; Persons had history of recurrent fever, abdominal pain and urinary discomfort, as showed by their renal profile with urolith in KUB in USG. Among females having complained of eructation, pain in upper abdomen, constipation, increased body weight, analysis showed the presence of Choleliths in USG abdomen (Table 10).

zyme inhibitors in food stuff, which alters hormonal and enzyme synthesis along with their function, resulting in marked increase in incidence of Diabetes mellitus, Hypothyroidism, Obesity, Chronic fatigue syndrome (CFS), Cholelithiasis, Urolithiasis [6-12] and Hypertension, as evidenced in the screening of 87673 rural population of varied socio economic and educational status, mode of life style, nature of work (among both rural down trodden and hard workers). The biokinetic of these diseases emergence can be summarised as shown in figure 1.

Particulars	Number		Total
	Male	Female	
Choleliths	029	2747	2776
Urolith in KUB	6016	2493	9509

Table 10: Distribution as per USG findings.

Result

Screening of the 87673 persons of both sexes, between the age group of 25 - 45 years and belonging to different socio economic, dietary, physical, educational and life style status, showed an increasing incidence of Diabetes mellitus with Fasting blood sugar > 200 mg (4.3%), Hypothyroidism (Myxoedema), with female predominance (6.5%), hypertension (22.8%) with malignant hypertension (4.5%), Urolithiasis (10.8%) and Cholelithiasis (3.2%).

Discussion

Advances in cultivation, improvement in life style, communication facility, mechanisation and digitalization of system are posing an increasing threat on body biokinetics due to the increasing non-nutrient in diet, self-medication, generation and stagnation of free radicals. Free radicals domination is due to the emerging en-

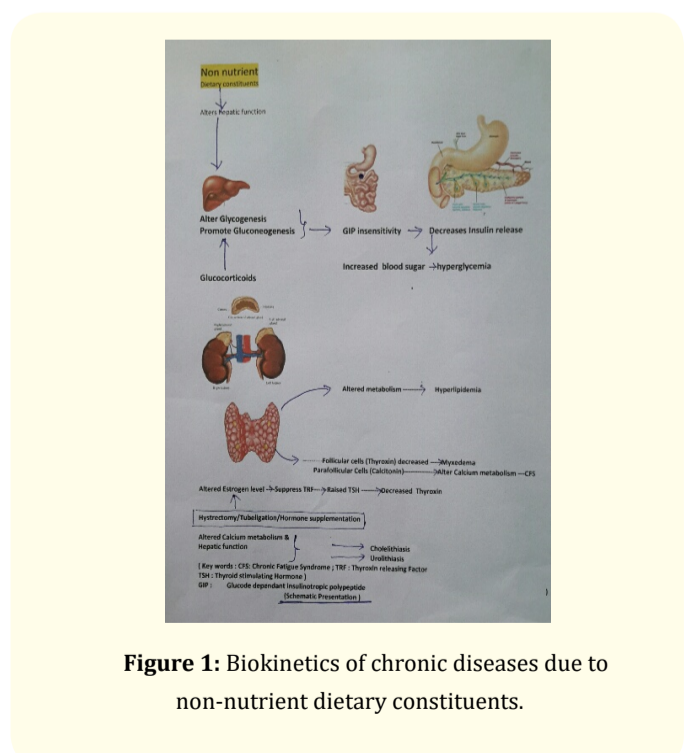


Figure 1: Biokinetics of chronic diseases due to non-nutrient dietary constituents.

Conclusion

Clinical evaluation of 87673 persons (both male and female) of different economic, educational and life style status, revealed an increasing trend in metabolic disorders, predominantly in male and hormonal disorder (Hypothyroidism) in female, especially after tube ligation or hysterectomy/and or non-child bearing female. In addition, urolithiasis and cholelithiasis have been commonly found to cause recurrent abdominal discomfort, suggestive of urolithiasis and chole lithiasis, as duly confirmed by USG abdomen.

Bibliography

1. Hansky J. "Neuro endocrine factors in food in current problems in nutrition pharmacology and Toxicology". AJ MacLean and ML Wahlquist (Ed) John Libbey, London (1988): 77-80.
2. Romsos DR and Leveille GD. "Effect of Diet on activity of enzyme involved in acid and cholesterol synthesis". *Advances in Lipid Research* 12 (1974): 97-146.
3. Gibson PR and Muir JG. "Non-nutritional effect of food, an underutilized and understudied therapeutic tool in GIT diseases". *Journal of Gastroenterology and Hepatology* 28.4 (2013): 37-40.
4. Shridhar G., et al. "Modern Diet and its impact on human health". *Journal of Nutrition and Food Sciences* 5 (2015): 430.
5. Sherita H., et al. "Prevalence and incidence of Endocrine and metabolic disorders in United states: A comprehensive study". *The Journal of Clinical Endocrinology and Metabolism* 94.6 (2009): 1853-1878.
6. Kumar KH and Patnaik SK. "Incidence of endocrine disorders in India in adult population". *Indian Journal of Endocrinology and Metabolism* 21.6 (2017): 809-811.
7. AG Unnikrishnan and Usha V menon. "Thyroid disorders in India: An epidemiological perspective". *Indian Journal of Endocrinology and Metabolism* 15.2 (2012): S78-S81.
8. Abraham R., et al. "Thyroid disorders in women of Puducherry". *Indian Journal of Clinical Biochemistry* 24.1 (2009): 52-59.
9. Ginter E and Sumko V. "Global prevalence and future of Diabetes mellitus". *Advances in Experimental Medicine and Biology* 771 (2012): 35-41.
10. Cornella Weikrt., et al. "Presence of Gallstones or Kidney stones risk in type 2 diabetes mellitus". *American Journal of Epidemiology* 171.4 (2010): 447-454.
11. EN Taylor and Andrew T Chan. "Cholelithiasis and risk of Nephrolithiasis (NCBI-NIH)". *The Journal of Urology* 186.5 (2012): 1882-1887.
12. Alberto Trincheri. "Epidemiology of urolithiasis, an update". *Clinical Mineral and Bone Metabolism* 5.2 (2008): 100-106.

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