AN OBSERVATIONAL STUDY TO ASSESS ASTHI DHATU SARATA IN MEDICAL STAFF WITH SPECIAL REFERENCE TO BONE MINERAL DENSITY

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ABSTRACT

Background:- Using Bone Mineral Density Test we can define patient's Asthi Dhatu Sarata that would help ayurvedic physician to give appropriate ayurvedic treatment. There is increasing number of patient having bone deformity Osteopenia or Osteoporosis. **Aim:–** An Observational Study to assess Asthi Dhatu Sarata in Medical Staff with Special reference to Bone Mineral Density. **Objective:-** To Assess the Asthi Dhatu Sarata in Medical Staff with the help of Bone Mineral Density. Study of Bone Mineral Density with help of Sonost 3000 Ultrasound Bone Densitometer. To Assess relationship between Osteopenia, Osteoporosis and Asthi Dhatu Sarata. **Material:-** In the study 50 Medical staff volunteers were included of Dr.D Y Patil Ayurved College And Research Centre. Sonost 3000 Ultrasound Bone Densitometer was used. Ayurvedic texts as well as the Modern text regarding the subject. **Methodology:-** Medical Staff Volunteers willing to participate in the study was included and assessed their Asthi Dhatu Sarata with help of Sonost 3000 machine. The Measurement Site is the calcaneus. It takes about 1 minute to measure the density and to display the shape of ultrasonic wave by computing simulation on the

monitor.[6] Bone Mineral Density. Screeneed individuals were categoriesd with the help of B.M.D Normal, Ostopenia, Osteoporosis and correlated with Uttam, Madhyam, Hina Asthi Sarata respectively. Observed data was analyzed.

KEYWORDS:- Bone Mineral Density (BMD), Asthi Dhatu Sarata, Sonost 3000 Ultrasound Bone Densitometer, Osteopenia, Osteoporosis.

INTRODUCTION

Sarata is a factor which tells us about strength of dhatus. In order to prevent diseases we must be aware of condition of Dhatus whether they are strong or weak. Dhatu sarata is qualitative assessment of seven dhatus and satva (mind).[1] In India Osteoporosis is a Common Metabolic Bone Disease having porous bone, which is associated with higher fracture risk.[5] Endocrine diseases like Cushing Syndrome, Thyrotoxicosis, Hypogonadism may leads to Osteoporosis.[9]

Bone Mineral Density, a measure of bone density, reflecting the strength of bones. BMD (Bone Mineral Density) was-measured with the help of Sonost 3000 Ultrasound Bone Densitometer for safe operation and for diagnosis of long term deformity. From T-Score present in BMD test (Bone Quality Index) Asthi Dhatu Sarata can be obtain. If the patient's T-Score is normal then Asthi Dhatu Sarta (Bone Quality Index) is Pravar Sara (Good Quality), if patient's T-Score is Osteopenia then patient's Asthi Dhatu Sarata is Madhyam Sara (Medium Quality), if patient' T-Score is Osteoporosis then Ashti Dhatu Sarata is Hina Sarata(Low Quality). Osteoporosis means a porous bone where the calcium content of the bone is less.[7]

Need of study

It would be helpful for Ayurvedic Physician to Diagnose various Bone derfomity.

It would be helpful for Ayurvedic Physcian to know Asthi Dhatu Sarata and treat it accordingly.

To know prognosis of patient before and after treatment.

Precipitation factor like fall from standing height or less causes Fragility fracture due to Osteoporosis and Osteopenia, thus to make diagnosis for same.[8]

Precipitation factor like bending, lifting, falling causes Vertebral Fractures due to Osteoporosis, thus to make diagnosis for same.[8]

Table 1: Who classification of Osteoporosis based on BMD.[4]

Classification	Bone mineral density	T-Score
Normal	Within 1 SD of the mean level for a young adult reference population	Above -1.0
Osteopenia	Between 1 and 2.5 SD below that of the mean level for a young adult reference population	Between -1.0 to -2.5
Osteoporosis	2.5 or more below that of the mean level for a young adult reference population	-2.5 or below -2.5

Dhatu sarata chart according to their types

Ashti Dhatu Sara	Pravar Sarata
Asthi dhatu Madhyam Sara	Madhyam Sarata
Asthi Dhatu Hina Sara	Hina Sarata

Correlation of T-Score and Asthi dhatu sarata chart

Normal	Asthi Dhatu Pravar Sara
Osteopenia	Ashti Dhatu Madhyam Sara
Osteoporosis	Asthi Dhatu Hina Sara

Data Showing Sarata distribution of patients

| Sarta	Frequency	%
Pravar	14	27.46 %
Madhyam	32	62.74 %
Hina	5	9.80 %
Total	51	100 %

The table shows that 32 (62.74%) Medical staff volunteers were Madhyam Sara, followed by 14(27.46%) Pravar sara medical volunteers. 5(9.80%) medical volunteers were Hina Sara.
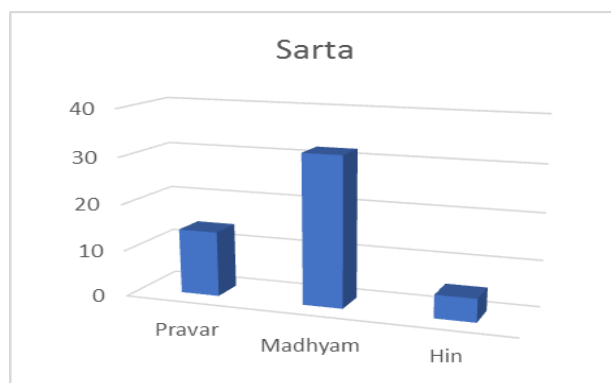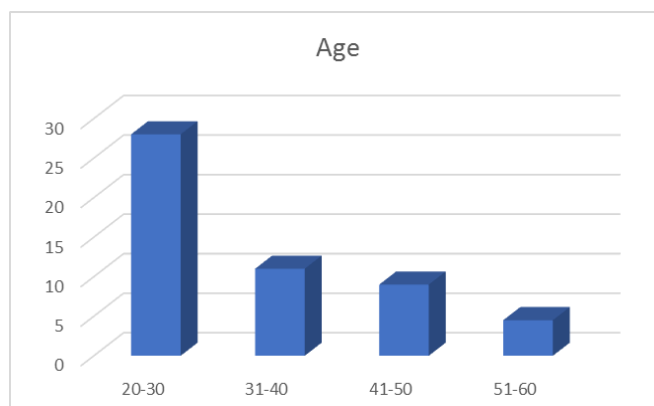
Data showing Gender distribution of volunteers

Asthi dhatu Sarata	Male	Female
Pravar Sarata/ Normal	5	9
Madhyam Sarata/Osteopenia	3	29
Hina Sarata/ Osteoporosis		5
Total	8	43
Percentage	15.69	84.31

The above table reveals that majority of the Medical staff Volunteers 43(84.31%) were Females, and 8(15.69%) Medical staff Volunteers were Males.
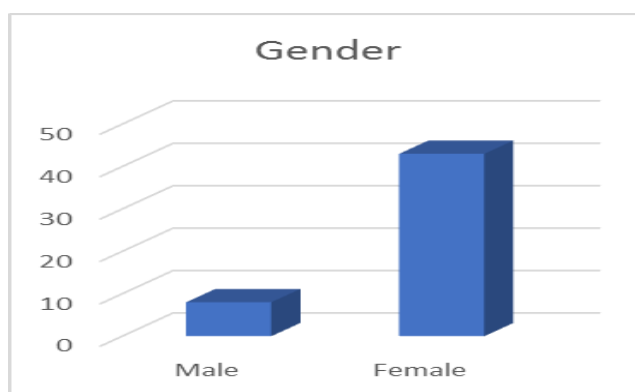
Data showing Age distribution of patients

| Asthi dhatu Sarata	20-30 yrs	31-40yrs	41-50yrs	51-60 yrs
Pravar Sarata/ Normal	11	3	1	1
Madhyam Sarata/Osteopenia	16	7	6	2
Hina Sarata/ Osteoporosis	1	1	2	
Total	28	11	9	3
Percentage	54.90%	21.57%	17.65%	5.88%

The above Table reveals that maximum 28(54.90%) volunteers were in 20-30 years age, 11(21.57%) volunteers were in31-40 years of age, 9 (17.65%) volunteers were in 41-50 years of age, 3(5.88%) volunteers were in 51-60 yrs of age.

Data showing occupation distribution of medical volunteers

Asthi dhatu Sarata	Staff Nurse	Ward boy	Aayha	Technician	Mavshi	Clerk	Store keeper
Pravar Sarata/ Normal	9	3					
Madhyam Sarata/ Osteopenia	21	1	5	2	1	2	1
Hina Sarata/ Osteoporosis	3				3	1	
Total	32	4	5	2	4	3	1
Percentage	62.76%	7.84%	9.80%	3.92%	7.84%	5.88%	1.96%

The table shows Occupation wise distribution of Medical volunteers in which Staff Nurses are 32(62.76%), Ward Boy were 4 (7.84%), Aayha were 5(9.80%), Technician were 2(3.92%), Mavshi were 4(7.84%), Clerk 3(5.88%), Store Keeper 1(1.96%).
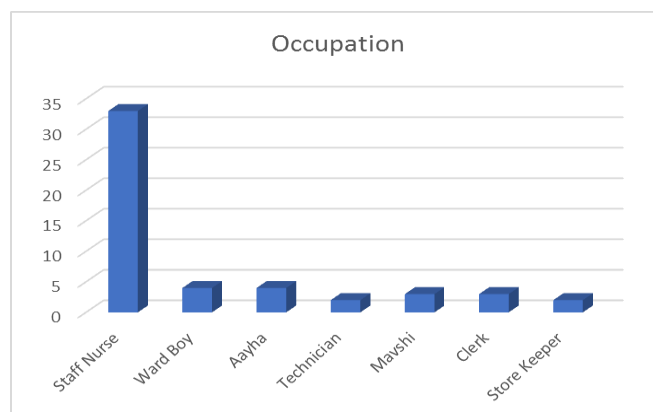
OBSERVATIONS AND RESULTS

Age

In our study the majority of Medical volunteers i.e. 28(54.90%) patients were in 20-30 years age out of which 11 were pravar sarata, 16 were madhyam sarata, 1 was hina sarata respectively Asthi Dhatu Sarata.11(21.57%) patients were in31-40 years of age out of which 3 were pravar sarata, 7 were madhyam sarata, 1 was hina sarata respectively Asthi Dhatu Sarata. 9 (17.65%) patients were in 41-50 years of age out of which 1 was pravar sarata, 6 were madhyam sarata, 2 were hina sarata respectively Asthi Dhatu sarata. 3(5.88%) Volunteers were in 51-60 years of age out of which 1 was pravar sarata, 2 were madhyam sarata respectively Asthi Dhatu Sarata.

The variation may be due to the facts that older volunteers frequently change their physician due to relapsing and remitting course of disease and as a result geriatric volunteers turnout could have reduced.

Gender

Out of 51 Medical volunteers majority of the Medical staff Volunteers were 43(84.31%) were Females in which 9 were having Pravar sarata, 29 were having madhyam sarata, 5 were having hina sarata respectively Asthi Dhatu Sarata. Among Medical staff Volunteers 8(15.69%) were males in which 5 were Pravar sarata, 3 were having Madhyam sarata respectively Asthi Dhatu Sarata.

Now a days stress factor to make balance between work and family is increased which causes more responsibilities on Females thus they were more curious to know about their physical health as compared to males. As a result Females are more in number than males included in study.

Occupation

Out of 51 Medical volunteers in which Staff Nurses are 32(62.76%) in which 9 were pravar, 21 were Madhyam sarata, 3 were hina sarata respectively Asthi Dhatu Sarata. Ward Boy were 4 (7.84%) in which 3 were pravar sarata, 1 was Madhyam sarata respectively Asthi Dhatu Sarata, Aayha were 5(9.80%) in which 5 were Madhyam sarata Asthi Dhatu Sarata. Technician were 2(3.92%) in which 2 were Madhyam sarata of Asthi Dhatu. Mavshi were 4(7.84%) in which 1 was Madhyam sarata, 3 were hina sarata of Asthi Dhatu Sarata, Clerk 3(5.88%) in which 2 were Madhyam sarata, 1 was Hina sarata respectively of Asthi Dhatu Sarata, Store Keeper 1(1.96%) in which 1 was Madhyam sarata of asthi Dhatu.

In my study all Medical Staff volunteers were included of Dr.D Y Patil College of Ayurveda and Research Centre thus all Occupation are related to Hospital.

CONCLUSION

Bone density is most important quantitative parameter from modern point of view for measuring the quality of bone.[2]

Over all 51 Meddical staff volunteers were included for screening for Bone Mineral Density Test 14 were normal, 32 were Osteopenic, 5 were Osteoporosis. Thus from observation we

had result that 14 were having Uttam Ashti Dhatu Sarata, 32 were having Madhyam Asthi Dhatu sarata, 5 were having Hina Dhatu sarata.

Medical Staff individuals which shows Normal Bone Density are having Pravar Asthi Dhatu Sarata With the help of statistical analysis there is perfect co-relation between Bone Density and Asthi Dhatu Sarata.

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