

## DIETARY MANAGEMENT IN PRAMEHA

R.K ACHARYA, B.N UPADHYAY and L.D DWIVEDI\*

*Departments of Kayachikitsa and Ayurveda Samhita\*  
Institute of medical sciences, Banaras Hindu University, Varanasi – 221 005.*

Received: 23 June, 1995

Accepted: 9 September, 1995

**ABSTRACT:** An interesting clinical study on dietetics I diabetes treatment is presented in this article.

### Introduction:

History of dietetics is very old, which is essential factor for the maintenance of life. It is described in the texts that the intake of Hita Ahar created subha (advantageous) effect and Ahit Ahar creates ashubha (harmful) effect. According to charaka, body as well as disease are caused by diet wholesome and unwholesome diet are responsible for happiness and misery. The ancient seers gave much importance to intake of proper diet and proper vihar for leading a diseases free life.

Prameha as disease entity has been recognized since long in India medicine. In atharvaveda prameha is described as Ashrava. Charak has mentioned "It is one of these disease s which started by the time of historical disruption of Yojnas organized by Daksha prajapati in an cient time. This us related to the eating of 'Havisha'a special type of food, made of sugar, milk rice used of offering in Yajnas". According to Sanskrit dictionary the word parameha is a combination of pra +meha, derived from miha –sechane meaning profuse (flow), excessive quantity and frequency is indicated by the prefix (pra) that is why the main characteristic features of prameha are

said to be prabhuta mutrata and Avila Mutrata.

Vagbhata describes prameha as frequent and copious urine with turbidity 'Prabhutavila mutrata' the symptoms described from a syndrome i.e Prameha, are studied under the category of urinary diseases (diseases of mutravaha srotas). Until now the scholars of integrated school of Indian medicine have recognized 20 types of pramehas as different urinary disorders, for example Udaka Meha as to be diabetes insipidus, sandrameha as chyluria sukra meha as spermatorrhoea, sikata meha as lithuria, kalameha raktameha and manjistha meha as haematuria Haridra meha –biluria etc., Ikshumeha sheeta meha and madhumeha have been equated with elementary glycosuria renal glycosuria and diabetes. According to such description prameha is a collective name of so many disorders of urinary tract other systemic diseases of varying etiology and pathology requiring almost different type of treatment of their amelioration. The prognosis of these diseases is also entirely different. The only thing in common to them is prameha as a hereditary disease, then all the 20 types of prameha may not be hereditary. Sushruta has described that acquired prameha is the result of over eating and over rest. So all the 20 types of pramehas may develop due to

over eating and over rest, pathogenesis for paittik and kaphaja prameha is very much similar except the predominance of Doshas and dushyas being the same only due to difference in their proportion (Samyog-Vishes) different manifestations are observed. Same is the case regarding the prognosis and treatment of the disease. All the 20 types of pramehas may lead to the stage of madhumeha starting from the aetiology to the prognosis prameha is one disease according to Ayurveda.

With difference in manifestation depending upon concentration of doshas and dushyas pramehas are identified and assigned to be different than one another. Hence it can not be compared with diseases of varying aetiology and pathology manifesting in urinary disorders. There are other urinary diseases, too where they can find suitable place. For example mutra Krichhra and Mutraghata. At the same time there is no bidding that other systemic disease should not develop, urinary symptoms for example kamala, Raktapitta, Kshata, Kshina and such other diseases. Therefore, authors advanced the view that the diabetes mellitus may be subtypes of prameha and the same has been examined critically regarding the aetiology pathology and the clinical features. The hypothesis could stand the test uniformly from all the angles.

The clinical features of different types of pramehas are not uncommon in patients of Diabetes mellitus themselves. Hence, they have been correlated in the view observed & facts. So the following conclusions are drawn.

1. Kaphaja and Pittaja Meha are juvenile or growth onset diabetes.
2. Diabetes mellitus is prameha as a whole not only ikshu Meha or sheeta meha or madhu meha, alone.
3. Kaphaja and pittaja mehas are maturity onset diabetes. There is predominance of growth promoting hormone in kaphaja Mehas and adrenal hyperactivity in Pittaja Meha.

The 20 subtypes of the three basic types of pramehas, Kaphaja, Pittaj. And Vataja are not fundamentally different. They only indicate the stage of disease.

The drastic disease diabetes can be controlled by giving comprehensive attention to 3 aspects i.e.

- (a) Ausadha (Medicine)
- (b) Ahar (Diet)
- (c) Vihar (Exercise)

Nowadays the modern medical scientists are also following the above three fold approach. The discovery of medicines like oral hypoglycemics and insulin have been controlling the diabetes, to a big extent, still then the role of Ahar (Diet) and vihar (Exercise) cannot be underrated. The Ahar dravyas as described in Ayurvedic samhitas cover all the food material given in following table No. 1.

**Table – 1 Pathya Ahar as described in Samhitas which covers all food materials.**

S. No	AHAR GROUP	NAME OF PATHYAAHAR
1.	CEREALS	Yava (barley –L.N = Chenopodium album) (Charka gave more stress on this food) Godhuma (wheat) shyamaka, Kodrava, Bajara.
2.	PULSES	Chanaka (gram), Adhaki, mudga (green gram).
3.	VEGETABLE	Tikta shakas - Nimba –L.N = Azadirachta indica. Sarshapa (mustard) L.N. = Brassica comprestis, Methika-L.N = Trigonella Foenum Graecum Karabellak – L.N Momordica charantia Kulaka – (patola) – L.N = trichosanthes anguina sobhanjana- L.N + Moringa Pterygosparma, Karkotaka = L.N Momordica dioica, Udumbara- L.N = Ficus racemosa, Rasona- (Garlic) L.N = Allium Sativum, Kadali = Musa paradisiaca.
4.	FRUITS	Jambu (black berry) L.N = Syzygium cumini, Talaphala- L.N = Borassus flabellifer, Kharjura – L.N = Phoenix sylvestris Tinduka – L.N = Disospyros embrayoptesis.
5.	SEEDS	Kamala –L.N =Nelumbo nucifera, Utpala – L.N = Nymphaea stellata
6.	FLESH	Harina (deer flesh), Shashaka (rabbit), Birds likes –=Kapota, Titira, lavaka.
7.	LIQUIDS	Old sura old (wine)
8.	OILS	Sarshapa (mustard), Danti-L,N = Baliospermum montanum, Ingudi- N = Balanitis aegyptiaca, best for vatic & kaphaj prameha. Ghrita (ghee) may be used in Pittaja Prameha ghritta & taila in sannipatika Prameha.
9.	EXERCISE	Paribhraman, Exposure to sun, wrestling

The indigenous diet may not be useful in lowering the blood sugar to the same extent as insulin and other hypoglycemic agent. But it has some other influences which may be useful for management of the disease and its complications keeping this view in mind an attempt has been made to study the effect of Ahar Dravyas on prevention and cure of prameha as described in brihatrayee. The aim of the present study is thus to establish the truthfulness of Ayurvedic concept and role of Ahar Dravyas in reference to prameha clinically for better understanding and appreciation.

#### **Material and Methods:**

The ancient scholars gave excellent idea about diet to explain the rationality on basis of Rasa, Guna, Veerya, Vipaka in relation to Doshas and Dhatus involved in the disease. But it will not be out of place to examine the effect of few common diet articles on blood sugar. It may support the promises advanced by them. Hence it was proposed to study the effect of common cereals i.e., Rice Wheat, Barley, millet, Maize and pulse like grams in blood sugar level in normal volunteers.

#### **Primary clinical trial on normal subjects:**

To study the effect of different cereals and gram on blood sugar level of normal subjects (pilot study)

**Materials and methods:**

A series of 7 normal subjects was selected and after taking their fasting blood sample

they were given 200 gm wheat chappati, Barley chappati, Bajara chappati, Maize chappati, Gram chappati and rice with patola curry separately. 3 blood samples were taken at hourly intervals from each individual and blood sugar estimation was done.

**Table -2:** Blood sugar pattern after different types of food in normal subjects.

No. of Subjects	Name of food	Blood sugar value in mg%			
		F.B.S	After 1hr.	After 2hr	After 3hr.
1.	Glucose	80	110	90	80
2.	Rice	68	82	100	82
3.	Wheat	70	84	96	92
4.	Barley	60	70	78	64
5.	Gram	66	76	86	80
6.	Millet	64	74	84	78
7.	Maize	62	72	88	74

**Comments:** the pilot study reveals that patterns of blood sugar level in different subjects receiving different diets are not same. The maximum rise recorded in rice and followed by wheat, of course minimum rise in case of Yava (barley) when compared to glucose it surpasses all cereals and pulses. Thus barley is the best diet for patients of prameha.

**Clinical trial on diabetic patients:**

**Material and Methods:**

A series of 30 diabetic patients was selected according to WHO criteria of varying age from 17-78 years both males and females from O.P.D & P.D of Kayachikitsa Department , S.S Hospital, B.H.U., Varanasi. A few of them were known diabetics i.e. I.D.D.M., while most of them were discovered for the first time i.e NIDDM, when they came with some other

complaints like neuritis, vaginitis or other lesion. The patients were divided into three groups according to the predominance of dosas i.e Vatika, Pattik, and kaphaja pattern according to the method of Singh and Dubey (1970). A case history was recorded in special proforma. The diagnosis of diabetes was done on the basis of fasting and P.P blood sugar level. The other pathological investigations i.e serum creatinine, X-ray, ECG has been done when needed. As far as possible the selected cases were hospitalized for detailed investigations but those who could not afford were treated from O.P.D all patients were supplied with the prepared trial diet chart for use. The assessments were done in terms of symptomatic improvements and blood sugar level estimation after 7 and 15 days.

**The trial diet chart:**

The Diet chart was prepared according to the description in ayurvedic classics, with some alterations. It is not a fixed chart to use for each and every patient. Many choice of diet are given and the physician should

choose the diets according to the predominant dosik prakriti. The prepared diet chart was supplied to every patient for use.

### The trial diet chart

Food Item 1	Latin Name 2	Qty in gms 3	Energy in kcal 4
Breakfast at 8 am			
Fried Sattu of Yava (barley)	Hordenm vulgare	50-100	168-236
Wheat	Triticum sativum	50-100	174-348
Chana	Cicer arietinum	50-100	85-170
Yava (barley) Dallia			
Boiled egg		one	86
Fruits			
Black berry	Syzigium cummini	100	9-18
Sharp apple		one	87-174
Orange	Citrus reticulate	one	12-20
Skimmed milk		200-300ml	58-87
+Ginger	Zingiber officinale	1tsf	4
+Methi powder	Trigonella foenum graecum	1tsf	33
+Tamal	Garcinia Morella	1tsf	
Tea added with Ginger +Tamal		1cup	
Without sugar skimmed milk curd		150-200	90-120
+Tamal powder=Methi powder		1tsf each	
+ Saindhav sald			
Lunch 12.00-2.00pm			
Chappati Yava (barley) Sattu		100-150	340-462
+Chana +Wheat + Sattu			
+ Methika powder +Tamal powder		2 tsf each	66
It will be better if Yava (barley), chana, wheat should be immersed in decoction of Triphala or Kutaja for 24 hours and dried, then chappati should be made this powder or (Yava= Wheat = Chana) powder = 2 tsf of methika (66kcal)+2 tsf Tamal powder +water-chappati should be made.			
Leafy Vegetables Tikta Shaka Methika Karabellak Sarshapa Mulaka Seasonal vegetables	Momordica charantia Brassica camprestis Raphanus sativus	100 100 100 300each of	60 17

Sobhanjana Kadali Karkotak Karvellak Patola Erndakarkati Mulak Dhamargava Bruntaka Alabu Rajmasa Karkaru Kusmanda Pulses  Mudga Masur Adhaki Kulatha Note: Sudha sarshapa tail or ghee 5 grams	Moringa pterigosperma Musa sapientum Cusumis utilisissimus  Trichosanthus dioica Carica papaya  Luffa acutangula Solanum melongena Lagenaria vulgaris Vigna catiang Cucurbita pepo Benincasa hispida  Phaseolus aureus Ervum lens Cajanus indicus Dolichos biflorus	following           30-50 each of the following	52  170 50 40 54 34 18 24 21 158 25 10  104-174 100-172 101-168
Spices: Lasuna (garlic), Allium sativum, Methica Maricha Piper nigrum, Adrak (Zingiber officinale) Tamal patra (Garcinia morelia) Haridra (Corcuma longa) should be fried.			
Challah (liquid type)+Tamal Powder + Maricha Powder + Saindhava Papad (fried mudga) (Green Gram) Achar  Amalaki Ginger Lemon Banana after meal (Musa sapientum) <b>Tea at 5.00pm</b> Fried mudga Papad Arrowroot biscuit Threptin biscuit Tea As prescribed in breakfast With our sugar Dinner at 9.00pm Yava = Chana + wheat mixed In same proportion should be prepared as in lunch.	Emblica officinalis  Citrus medica	100-200   one 10 each of the following   one  one  two two one cup  100-150	90-120   5

Vegetables, As described in lunch skimmed milk + 1 tsf methi Powder +ginger powder 1/2 tsf At bed time.		200ml	58-87
<p>Note: Chatni: 10g gives 5kcal Amalaki, ginger, garlic, podina (Mentha spicata) 10 gm leaf pasted with saindhava Salt=Maricha.</p> <p>Non-Vegetarian: Birds flesh which is beneficial i.e, Kapota, Titir, Lavak, cock or hen except water living birds, deers, and shashaka meat can be taken in quantity 150-200gm = 164-218 kcal.</p> <p>Exercise: Morning walk minimum 1-2 km in 30 minutes or dry light Vyayam. But in our advice Asana-Uttanapadasana., Pavanmuktasan, Naukasana Puschimotanasa, Vajransan, Mayurasana are advised observing the condition of patients and started slowly and very comfortably.</p> <p>Pranayama – only sahaja pranayam, dhyan- meditate any liking God.</p>			

The patient having predominance of kapha Dosa should specially take the some items of food such as Yava, Chana, Mudga, Kulattha, Karavellak, Eranda Karkati, sovanjan, Patola, Ladies finger, Methika Shak, or Kara-vellak shak, Mulak shak, Takra, Amlaki Usnodak and heavy exercise.

The patient having predominant pitta Dosa should take Yava, godhuma, Mudga, Adhaki Masura, Kusmanda, Karvellak, Kadali Amalaki tumbi, Karkati, Vruntak, Skimmed milk, skimmed curd, apple, methika sarsapa shak and kukkuta mamsa (chicken).

Some chronic patients were found to be take in some oral hypoglycemic drugs and insulin also. The blood sugar at that condition was taken as basal levels. During follow up the effect of the trial diet was observed in relation to the basal records of symptoms and blood Sugar levels.

### Observations and Results:

Effect of regimen on patients of prameha.

In 30 registered patients the clinical trial of the prepared diet chart was carried out. The clinical response (Subjective Assessment) of diabetic symptomatology was evaluated. Then the cases were subjected to FBS and

PPBS (1 and ½ hours after 75 gms of glucose intake). The patients were grouped into three different categories i.e, Kaphaja group having 15 patients pittaja and vataja groups having 10 and 5 patients, respectively. Two subsequent follow up of 7 days were done.

### Clinical Response:

Clinical features of diabetes mellitus were graded in 0-3 grades. The mean grade scores of the clinical symptoms of 30 patients were compared for every follow up some abbreviations were used in different tables.

### Abbreviations:

- BT: Before treatment
- AT<sub>1</sub>: First follow up after 7 days of treatment
- AT<sub>2</sub>: Second follow up after 15 days of treatment
- SD: Standard deviation
- SE: Standard error
- MGS: Mean grade score
- d<sub>1</sub>: Difference of blood sugar after 1<sup>st</sup> 7 days treatment
- d<sub>2</sub>: Difference of blood sugar after 2<sup>nd</sup> 15 days treatment

**Table No 3: Improvement in clinical features after dietary management  
In the patients of Prameha (D.M.) (N=30).**

	BT	AT <sub>1</sub>	d <sub>1</sub>	AT <sub>2</sub>	d <sub>2</sub>
Polyuria					
MGS	1.3	1.13	0.1	1.06	0.23
SD	± 1.022	± 1.074	±0.547	± 1.04	± 0.56
SE	0.186	0.196	0.1	0.19	0.103
T			1		2.26
p			>0.05		<0.05
Polydypsia					
MGS	1.1	0.93	0.16	0.86	0.2
SD	±0.959	±1.080	±0.461	±0.86	±0.484
SE	0.175	0.197	0.084	0.157	0.088
T			1.984		2.272
p			>0.05		<0.05
Polyphagia					
MGS	1.2	1.1	0.1	1.06	0.133
SD	± 0.886	± 0.803	± 0.402	± 0.944	± 0.345
SE	0.161	0.146	0.073	0.172	0.063
T			1.36		2.116
p			>0.05		<0.05
Weakness					
MGS	1.6	1.33	0.26	1.3	0.33
SD	± 0.723	± 0.758	± 0.691	± 0.876	± 0.758
SE	0.132	0.138	0.126	0.16	0.138
T			2.116		2.415
p			<0.05		<0.05
Cramps on Walking					
MGS	0.4	0.4	0	0.36	0.04
SD	±0.563	± 0.563	±0	± 0.556	± 0.182
SE	0.102	0.102	0	0.101	0.033
T			0		1.21
p			>0.05		>0.05
Joint Pain					
MGS	0.4	0.3	0.1	0.33	0.7
SD	± 0.674	± 0.534	± 0.305	± 0.606	± 0.253
SE	0.123	0.097	0.055	0.11	0.046
T			1.818		1.52
p			>0.05		>0.05
Weight Loss					



MGS	0.53	0.466	0.066	0.33	0.2
SD	$\pm 0.681$	$\pm 0.681$	$\pm 0.365$	$\pm 0.546$	$\pm 0.484$
SE	0.124	0.124	0.066	0.94	0.088
T			1.010		2.272
p			>0.05		<0.05

### **Polyuria:**

The mean grade score of polyuria before treatment was found  $1.3 \pm 1.027$ , after 7 days it was  $1.13 \pm 1.1074$ . The paired 't' thus calculated was 1 ( $P > 0.05$ ) which showed not significant. After 15 days the mean grade score was found  $1.06 \pm 1.04$ , paired 't' thus calculated was 2.2 ( $p < 0.05$ ) is significant which shows the improvement in clinical symptoms.

### **Polydipsia:**

Asymptomatic improvement was found in polydipsia. The initial mean grade score was  $1.1 \pm 0.959$ . After 7 days of dietary management the mean grade score was  $0.93 \pm 1.080$  and 't' thus calculated was 1.984. After 15 days the MGS came down to  $0.861 \pm 0.86$  and 't' was 2.272 which is statically significant.

### **Polyphagia:**

Though there is clinically significant improvement of polyphagia after 7 days it was not statistically significant. After 15 days the mean grade score was  $1.06 \pm 0.944$  and 't' was 2.116 ( $p < 0.05$ ) which was

statistically significant. This also give the idea of the improvement in clinical symptoms.

### **Weakness:**

The value MGS was  $1.6 \pm 0.723$  before treatment which came down to  $1.33 \pm 0.758$ . After 7 days of dietary management and 't' thus calculated 2.116 ( $p < 0.05$ ) which showed significant results. But after 15 days more improvement observed because MGS was  $1.3 \pm 0.876$  and 't' was 2.415 ( $p < 0.05$ ) which is significant.

### **Cramps on walking, decreased libido, joint pain:**

After 7 days and 15 days of dietary management no improvement was statically found.

### **Weight Loss:**

Initial value of MGS was  $0.53 \pm 0.681$ . After 7 days there was no significant improvement but after 15 days MGS came down  $0.33 \pm 0.546$  and calculated 't' value 2.272 ( $p < 0.05$ ) Showed improvement statistically significant.

**Table No 4: Improvement in FBS and PPBS in 30 Prameha Patients after 7 days and 15 days of dietary management.**

	BT	AT <sub>1</sub>	d <sub>1</sub>	AT <sub>2</sub>	d <sub>2</sub>
F.B.S					
MGS	133	125.4	7.6	123.5	9.5
SD	± 44.831	± 48.608	± 8.544	± 5.545	± 8.54
SE	8.185	8.875	1.559	9.228	1.560
T			4.874		6.164
p			<0.001		<0.001
P.P.B.S					
MGS	236.3	231.6	4.7	228.6	7.7
SD	±64.637	± 68.144	± 6.154	± 8.103	±
SE	11.801	12.441	1.123	14.794	8.351
T			5.016		1.526
p			<0.001		5.657
					<0.001

The initial fasting blood sugar level in 30 patients was 133± 44.831. After 7 and 15 days of dietary management the clinical improvements were seen. The reduction in blood sugar was 7.6 and 9.5 respectively which is highly significant (p<0.001).

The initial PPBS level in 30 patients was (236.3 ± 64.637). After 7 and 15 days of dietary management the sugar level came down (231± 68.144) and (228.6 ± 8.103). The mean reduction value was 4.7 and 7.7 which is highly significant (P<0.001).

**Table No 5: Improvement in mean fasting blood sugar in the patients of Prameha (D.M.) following the dietary management in different types of Prameha (N=30).**

	BT	AT <sub>1</sub>	d <sub>1</sub>	AT <sub>2</sub>	d <sub>2</sub>
Types of Prameha:					
Kaphaja Prameha					
MGS	109.5	97.8	11.7	94.6	15.0
SD	± 25.05	±28.852	±7.166	±31.69	±7.606
SE	6.469	7.451	1.850	8.184	1.637
T			6.324		7.637
p			<0.001		<0.001
Pittaja Prameha					
MGS	129.2	124.4	4.8	123.2	6.0
SD	±17.44	±16.814	±9.681	±15.583	±6.07
SE	3.184	5.317	3.061	5.024	1.920
T			1.568		3.125
p			>0.05		<0.02
Vataja Prameha					
MGS	211.5	210.2	1.3	210.8	0.7
SD	±43.433	±41.643	±2.334	±42.44	±1.788
SE	7.93	18.62	1.043	18.98	0.799
T			1.246		0.876
p			>0.05		>0.05

The initial fasting blood sugar in Kaphaja group was  $109 \pm 25.050$ . After 7 days of dietary management this was found  $97.8 \pm 28.852$ , calculated 't' was 1.850 ( $p < 0.01$ ) showed highly significant improvement. After 15 days of dietary management this level was found to be  $94.6 \pm 31.69$  and calculated 't' was 7.637 ( $p < 0.001$ ) showed highly significant improvement.

In Pittaja group the initial mean FBS was  $129 \pm 17.44$  and after 7 days no significant improvement noted and after 15 days MGS was  $123.2 \pm 15.583$  and calculated 't' value was 3.125 ( $P < 0.02$ ) showed significant result.

In Vataja group the initial FBS was  $211.5 \pm 43.433$ . After 7 days and 15 days of dietary management no significant result observed.

**Table No 6: Improvement in mean PPBS in patients of Prameha (DM) following dietary management in different types of Prameha (N=30)**

	BT	AT <sub>1</sub>	d <sub>1</sub>	AT <sub>2</sub>	d <sub>2</sub>
Types of Prameha:					
Kaphaja Prameha	201.23	191.5	9.7	186.9	14.3
MGS	$\pm 27.43$	$\pm 27.64$	$\pm 5.818$	$\pm 29.280$	$\pm 7.963$
SD	5.008	7.138	1.502	7.562	2.056
SE			6.458		6.955
T			<0.001		<0.001
p					
Pittaja Prameha					
MGS	237.8	235.8	2	234.1	3.7
SD	$\pm 31.353$	$\pm 31.501$	$\pm 3.496$	$\pm 32.381$	$\pm 3.860$
SE	5.724	9.965	1.105	10.240	1.220
T			1.809		3.032
p			>0.05		<0.02
Vataja Prameha					
MGS	344.3	343.6	0.7	342.8	1.5
SD	$\pm 84.45$	$\pm 83.75$	$\pm 1.788$	$\pm 83.55$	$\pm 2.5$
SE	15.376	37.45	0.799	37.36	1.118
T			0.876		1.341
p			>0.05		>0.05

The initial mean PPBS in kaphaja group was  $201.23 \pm 27.43$ . After 7 days of dietary management it was came down to  $191.5 \pm 27.64$ . 't' value calculated as 6.458 ( $< 0.001$ ) showed a highly significant improvement. After 15 days it was found to be  $186.7 \pm 29.280$  and calculated "t" value. ( $p < 0.001$ ) which showed also highly significant improvement.

In the pittaja prameha group the initial mean PPBS was  $237.8 \pm 31.353$  and after 7 days of dietary management it was came down to  $235.8 \pm 31.506$  which showed clinically improved but not statically significant ( $p > 0.05$ ) but after 15 days it was  $234.1 \pm 32.381$ . the 't' calculated was 3.032 which showed significant at 2% of probability ( $p < 0.02$ ).

In Vatik group the initial mean PPBS was  $344.3 \pm 84.215$ . After 7 and 15 days of

dietary management no significant improvement was observed.

**Table No 7: Improvement in FBS and PPBS in NIDDM Patients after dietary management (N=25)**

	BT	AT <sub>1</sub>	d <sub>1</sub>	AT <sub>2</sub>	d <sub>2</sub>
F.B.S					
MGS	117.4	108.4	9	106.09	11.4
SD	$\pm 24.017$	$\pm 27.72$	$\pm 8.781$	$\pm 29.689$	$\pm 8.236$
SE	4.803	5.544	1.756	5.937	1.647
T			5.102		6.921
p			<0.001		<0.001
P.P.B.S					
MGS	215.86	209.24	6.62	205.80	0.06
SD	$\pm 33.792$	$\pm 36.164$	$\pm 6.257$	$\pm 38.072$	$\pm 8.406$
SE	6.758	7.232	1.251	7.614	1.681
T			5.291		5.984
p			<0.001		<0.001

The initial mean fasting PP blood sugar level in 25 NIDDM patients out of 30 cases was  $215.86 \pm 33.792$ . After 7 days and 15 days of dietary trial the remarkable improvement has been observed. Then fasting blood sugar level after 7 days was

$108.4 \pm 27.72$  and  $106 \pm 689$  respectively which is statistically highly significant. Similarly in PPBS after 7 days and 15 days of dietary management the MGS was  $209.24 \pm 36.164$  and  $205 \pm 28.072$  respectively. Which was also statistically significant.

**Table No 8: Improvement in FBS and PPBS in IDDM Patients after dietary management (N=5)**

	BT	AT <sub>1</sub>	d <sub>1</sub>	AT <sub>2</sub>	d <sub>2</sub>
F.B.S					
MGS	211.5	210.2	1.3	210.8	0.7
SD	$\pm 43.433$	$\pm 41.643$	$\pm 2.334$	$\pm 42.44$	$\pm 1.788$
SE	7.93	18.62	1.043	18.98	0.799
T			1.246		0.876
p			>0.05		>0.05
P.P.B.S					
MGS	344.3	343.6	0.7	342.8	1.5
SD	$\pm 84.215$	$\pm 83.75$	$\pm 1.788$	$\pm 83.55$	$\pm 2.5$
SE	15.376	37.45	0.799	37.36	1.118
T			0.876		1.341
p			>0.05		>0.05

Out of 30 cases only 5 patients were IDDM patients where 2 of them were juvenile type of diabetics. The initial mean blood sugar level of FBS and PPBS was  $211.5 \pm 43.433$  and  $344.3 \pm 84.215$  respectively. After 7 and 15 days of dietary management no significant reduction was observed in both FBS and PPBS level of the patients.

### **Discussion:**

The clinical profile of the patients symptoms grade scores were developed symptoms of weakness was found in 100% of cases as the disease is devastating. As per ayurvedic point of view Dhatukshaya and Oja kshaya are there. Although most of were having weakness grade II. Symptoms of polyuria and polyphagia was found in maximum number of patients (80%) each, as their chief complain. As per Ayurvedic description Prabhutavila – Mutrata is the chief Rupa; this because increases blood glucose amount have to be filtered by the kidney, which takes much of the polydipsia. Polydipsia was observed in 66.66% of cases, Weight loss was found in 43.33% of cases the cause of which may be increased katabolism of amino acids prevents proper protein synthesis and this leads to weight loss. Actually there is a Dhatu kshaya stated earlier as per the Ayurvedic principle. Other complaints like cramps on walking, joint pain decreased libido were also noticed in quite good number of patients.

The clinical trial was carried out on 30 patients of prameha. In symptomatic grade score analysis after 7 days of dietary management polyuria, polydipsia, polyphagia showed clinical improvement but statistically not significant. But after 15

days of dietary management all the group showed both clinical improvement and statistical significant result. ( $p < 0.05$ ). In case of weakness significant result was found in both 7 and 15 days dietary management. There was no significant effect in cramps-on-walking, libido decreased and joint pain. In case of weight loss there was significant effect observed after 15 days of dietary management.

The clinical response of dietary management on F.B.S and P.P.B.S was observed in 3 groups of patients i.e Kapha/Pitta and Vata dosa. Predominant groups of cases. The response was highly significant in Kapha dosa predominant patients in all follow up groups i.e 7 and 15 days. In case of pitta dosa predominant cases the effect was only significant in 7 and 15 days of dietary management but not significant all round the treatment group in Vataja predominant cases, as they were stated to be asadhya and chronic as described by Ayurveda. Again the dietary management was highly significant all round in case of NIDDM patients where as not significant in case of I.D.D.M cases.

### **Conclusion :**

1. The Ahar Chikitsa (Dietary management) is highly effective in Early onset of disease and in case of kapha dosa predominant NDDM patients.
2. Dietary management is a supportive/ accessory treatment for vata dosa predominant and I.D.D.M. Patients which requires a long term follow-up

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