

Studies on Amree Plus, a herbal compound formulation regarding its pattern of actions in the management of Diabetes Mellitus (Type II)

INTRODUCTION

WHO has recommended the investigation of hypoglycemic agents of plant origin used in traditional medicines. In the past 20 years, various plant extracts have proved their usefulness in Diabetes as prescribed in Ayurveda. Studies on plants like Karela (*M. charantia*), Gudmar (*Gymnema sylvestre*), Vijaysaar (*Pterocarpus marsupium*) etc. reveal the presence of compounds with insulinomimetic bioactivity and immunoreactivity capable of eliciting hypoglycemia. Ayurvedic claims made about thousands of years before are still exclusive & gradually being substantiated by the modern sciences - the anti-oxidative aspect to check the degeneration, delaying absorption of glucose, activating the insulin secretion, acting like that of insulin to enhance peripheral utilisation, supplementing micro-nutrients like phosphates, chromium, copper, manganese etc. are some of the aspects of modern science which have already been hidden in the Ayurvedic drugs like Neem, Karela, Gudmar, Kutaki etc. Besides the aforesaid open evidences, there still remains so many of the exclusive factors with Ayurvedic herbs where there is lot of scope for experimentation and clinical evidences like maintaining normoglycaemia, attempting for regeneration of β -cells, toning the micro-vasculature and preventing the conditions of Neuropathy & Nephropathy. Certain herbs have been suggested for increasing the sensitivity towards insulin rather than the resistance. The sum of the scientific achievements have been documented in the modern scientific world.

I confirm the sincerity & genuineness of the investigations like blood glucose & Insulin levels done in this study. The study points towards action of amree plus on intestinal glucose absorption & action on insulin action (sensitivity)

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AIM OF STUDY :

1. To study the exclusivity of the nature's drugs effects in a synergistic formulation Amree Plus Granules as :
 - a. Delaying glucose absorption
 - b. Regulating hepatic glucose release and
 - c. Utilisation and sensitisation of insulin.

MATERIALS & METHODS

Drug Material

The formulation under study i.e. Amree Plus Granules were taken from its manufacturer Aimil Pharmaceuticals (India) Ltd. Single dose pouches of 5 gms. each were made.

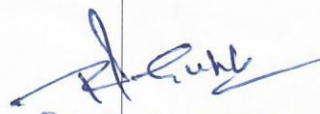
Patients

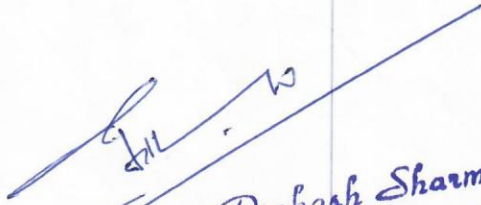
12 patients & 21 patients (separately) of type – II diabetes irrespective of the sex between age group of 40 – 60 years were taken for the purpose of study. Patients were taken from multi speciality hospital i.e. Aggarwal Hospital, 24/7 Shakti Nagar, Delhi – 7.

Laboratory Investigations were conducted at Diabetes Endocrinology Lab., Safdarjung Enclave, New Delhi under the supervision of Dr. G. P. Sharma, Endocrinologist (AIIMS).

Blood sugar level - Fasting
- Post Prandial

Insulin assay – Estimation of serum insulin



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STUDY PROCEDURE

To establish the efficacy of this herbal formulation in delaying the glucose absorption from the small intestine & regulating hepatic release of glucose, 12 patients under study were examined for their blood sugar - levels fasting & P.P. both. On this day they were given their regular OHGs also. Then their OHGs were withdrawn for 72 hours so as to minimise the serum concentrations of OHGs. On the 4th day again they were examined for their blood sugar levels initially fasting when they were given their regular OHGs and test dose of Amree Plus Granules accordingly in relation with their meal. After 1½ hour of lunch patients were examined for post prandial serum level of glucose.

To establish the efficacy of this herbal formulation as increasing peripheral utilization of glucose and sensitisation of insulin, 21 patients of type II diabetes of either sex between the age group of 40 – 60 years were taken for the purpose of study. Initially regular OHGs of these patients were withdrawn for 72 hours so as to minimise serum concentrates of OHGs. These patients were examined for their fasting blood sugar levels and serum samples were taken for insulin assay. Then 19 patients out of these 21 were given single dose (5 gm) of Amree Plus Granules while 2 were given glibanclamide (5 mg) followed by uniform meals. After 1 ½ hour of taking meals patients were again examined for their post prandial serum level of glucose and serum samples were taken for insulin assay.



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OBSERVATIONS

In the first part of study i.e. establishing the glucose absorption delaying activity and regulation of hepatic release of glucose, in observations of the blood sugar levels fasting as well as post prandial with Amree Plus & without Amree Plus are shown in the following table :

Sl. No.	Name of patient	With OHG without Amree Plus		With OHG with Amree Plus	
		Fasting (in mg. %)	PP (in mg. %)	Fasting (in mg. %)	PP (in mg. %)
1.	A. N. Dhir	91	159	96	135
2.	B. C. Jain	103	148	123	151
3.	Kartar Sethi	132	217	125	169
4.	Leela Krishan	138	189	138	182
5.	Loval Chopra	148	215	164	198
6.	Manisha	93	136	111	140
7.	Parwati	118	145	125	143
8.	Rakesh Gupta	96	118	122	114
9.	S. S. Arora	135	180	121	190
10.	Satish Chand	181	250	228	232
11.	Shakuntla	145	239	124	221
12.	Shiv Dayal	125	183	122	159

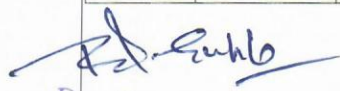

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In the second part of study i.e. establishing the peripheral glucose utilization activity and insulin sensitisation activity, the observations of blood glucose levels and insulin levels before and after giving the test dose of Amree Plus Granules and the prescribed OHG are listed in the following table.

Abstract of data's from Insulin Assay

							Mg/dl
	Insulin (μIU/l)			Blood Glucose Fasting			
Sl. No.	Before Amree Plus	After Amree Plus	Change	Before Amree Plus	After Amree Plus	Change	Patient
<u>With Synthetic Drug (Glibenclamide)</u>							
1	25.0	33.0	+8.0	139	138	-1	D. P. Jain (M)
2.	18.0	42.0	+24.0	188	180	-8	Gagan Jeet (M)
<u>With Amree Plus</u>							
1.	32.0	32.0	0.0	101	91	-10	B. D. Gupta (M)
2.	16.0	16.0	0.0	200	170	-30	Amar Singh (M)
3.	12.0	11.0	-1.0	153	135	-18	Shiv Dayal (M)
4.	10.0	8.5	-1.5	124	112	-12	Jai Kishan (M)
5.	10.0	8.0	-2.0	304	262	-42	Kundan (M)
6.	26.0	23.5	-2.5	132	125	-7	Vijay Aggarwal (M)
7.	23.5	19.0	-4.5	130	120	-10	Veena Jain (F)
8.	25.0	19.0	-6.0	199	177	-22	Susheel Jain (M)
9	14.0	8.0	-6.0	115	110	-5	Dr. M. M. S. Yadav (M)
10.	14.0	6.5	-7.5	280	243	-37	Mohd. Saleem (M)
11.	22.0	14.0	-8.0	117	102	-15	Manjeet Singh (M)
12.	30.0	19.0	-11.0	99	96	-3	Suresh Garg (M)
13	22.0	8.0	-14.0	175	160	-15	Dr. Suresh Aggarwal (M)
14.	4.0	3.5	-0.5	105	92	-13	Madan Lal (M)
15.	7.0	6.0	-1.0	90	85	-5	Champa Dai (F)
16.	8.0	6.0	-2.0	96	80	-16	Kamlesh (F)
17.	19.0	11.0	-8.0	72	64	-8	Ramesh (M)
18.	36.0	42.0	+6.0	154	142	-12	M. P. Gupta (M)
19.	29.0	40.0	+11.0	141	129	-12	Vijay Aggarwal


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