Research Article

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SUCCESSFUL SWITCH OVER FROM INSULIN THERAPY TO AYURVEDA MEDICATION IN A NEWLY DIAGNOSED DIABETIC PATIENT: A CASE STUDY

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ABSTRACT

A 51-year male patient came to our OPD, complaining of blurry vision, generalised weakness and headache for one week. His body weight was 62 Kg, BMI 23.6, blood pressure was 130/86 mm of Hg, fasting blood sugar was 347 mg/dl, PPBS-413 mg/dl, and HbA1C was 16% total cholesterol- 241, triglyceride- 300, and renal profile within normal limits. Patient was started with human insulin 12 units before lunch and 8 units before dinner for one month. Patient showed dissatisfaction in insulin therapy and willing to switch over to Ayurveda medication. We planned treatment for pacify Vata by downward movement (Vatanulomana) and vitalisation (Santarpana chikitsa*)*. We administered Triphala Churna with lukewarm water for Vatanulomana (pacify Vata); Dhanvantar Ghrita and Vasant *Kusumakara Rasa (VKR)* for Santarpana (vitalisation) and AYUSH-82 as a hyperglycaemic agent for total 21 weeks step by step. All these treatment regimens increase the C peptide level, lowering the HbA1C from 9% to 5.4 % which is a clear indication of restore the beta cell function and successful in shifting ayurveda medication from insulin. Further study for large number of population is suggested.

Keywords: Ayurveda medication, Diabetes, Insulin therapy, Triphala Churna, Vasant Kusumakara Rasa,

INTRODUCTION

Diabetes is a fast-growing disease and gained the status of epidemic and more than 7.1% of adult population of India affected by this disease[1]. Diabetes is still leading cause of macro and micro vascular complications like cardiovascular diseases (CVD), amputation, neuropathy, nephropathy and retinopathy resulting into organ damage and tissue damage[2]. Irrespective of treatment modalities and systemic use of medicine, the key issue in diabetic management is glycaemic control. The initial management of diabetes includes patient education, dietary counselling and individualised programme of exercise and yoga. Final management is insulin and its analogues. The role of insulin therapy in obese and insulin resistant diabetes patient is also debateable. Insulin has gotten reputation for "being an end of line" of medication in type 2 diabetes that once start cannot stop. But if glucose levels are controlled and lifestyle changes are in order then people may able to switchover from insulin to oral medication.

Oral hypoglycaemic agents (OHA) are 1st treatment choice in newly diagnosed diabetics[3]. Previously untreated patient presenting with severe hyperglycaemia (HbA1C>10%) having the risk of vascular events and hyperglycaemic coma[4] can be treated with intensive insulin therapy[5,6]. Insulin therapy may be required to achieve adequate glycaemic control in some patients, they so called secondary failure to OHA. Some Patients are hesitating to continue insulin, and some have adverse reaction to insulin[7]. There are guidelines existed for shifting patient's treatment regimen form OHA to Insulin[8,9] but no such guidelines for shifting a patient from insulin to OHA therapy. Physician and patient consider such a change when considerable improvement in a patient status and it will appear that OHA would sufficient to maintain glycaemic control. Generally cautious reduction of dose of insulin can consider after adding one or two OHA. It is premature to discontinue insulin if glycaemic target HbA1C of 6.5% is not maintained[10]. Shorter duration, higher BMI and lower 2-hour glucose level were predictor for switching from insulin to OHA. Some Type-II patient can maintain optimal glycaemic control by OHA after their uncontrolled hyper glycaemia is corrected by temporary induction of insulin therapy. Typically, Insulin amount can be increased or decreased by 2 to 3 units every three to seven days if the patient's blood glucose is not within set target[11,12].

Diabetes is well documented in Ayurveda in terms of its patho-physiology, clinical features and treatment modalities[13]. Central Council for Research in Ayurveda Sciences has made tremendous effort to publish Guidelines for prevention and management of Diabetes according to Ayurveda[14] and brought a new formulation AYUSH-82.This AYUSH-82 is commercialised and available in market as IME-9, Right Sugaretc[15].The efficacy of Ayurveda formulations are evaluated by Ayurveda universities as well as abroad research units[16-17].Now high number of patients are attracted towards Ayurvedic treatment for diabetes and dyslipidemia[18]. Uncomplicated hyper glycaemia can be controlled through single herbal medication[19]. Comprehensive treatment approach suggested for prevention and care of diabetes[20]. Ayurveda herbs are producing hypoglycaemic effect by reducing glucose production, lower glucose absorption in intestine, increase insulin secretion, inhibit pancreatic α amylase and by peripheral glucose utilisation[21,22]. Vasanta Kusumakara Rasa (*VKR*) is maintaining good blood sugar level and nephropathy by increasing plasma insulin; improving creatinine clearance and erythropoietin level. It also acts as anti-

inflammatory and decrease pro inflammatory cytokines responsible for beta cells[23].

Many times patient fear to adherence for insulin therapy. One of such patient switching from insulin to Ayurveda and we observed the case meticulously and outcome recorded.

Case Presentation and History

A 51-year male patient came to our OPD (Registration No-4869; dated 7/9/16) complaining of blurry vision, generalised weakness and headache for one week. On examination, the patient body weight was 62 Kg, BMI 23.6, blood pressure was 130/86 mm of Hg and random blood sugar was 481mg/dl. On next day after taking his blood investigations his fasting blood sugar 347 mg/dl, PPBS-413 mg/dl, HbA1C was 16%total cholesterol- 241, triglyceride- 300, and renal profile within normal limits. The patient went to All India Institute of Medical Science, Bhubaneswar for further evaluation and treatment. They started human insulin 12 units before lunch and 8 units before dinner for one month. After seven days of insulin therapy he came again to our hospital with FBS - 180 mg/dl and PPBS 256 mg/dl and showed his dissatisfaction with insulin therapy and willing to switch Ayurveda medication. After taking complete history of the patient, his physical assessment by Ayurveda parameters was done. The Astavidha Pariksha (eight fold of examination) were Nadi *(*pulse*)*- Sarpa Gati, Mutra *(*Urine*)* –Aavil Varna, *Mala (*stool*)*- Malabaddhata *(*constipation*),* Jivha *(*tongue*)*- Saam, Sabdda *(*sound*)* –Samanya(general), Sparsa *(*touch*)*- *Ruksha, Druk (*appearance*)*- Samanya, Akruti *(*physical constitution*)*– Samanya. The patient is having *Vata Kapha Prakruti*. Therefore, we planned for Vatanulomana (pacify vata*)* and Santarpana Chikitsa (Vitalisation therapy).

Selection of Treatment Plan and Outcome Measure

Our primary objective was to shift patient from Insulin therapy to *Ayurveda* medication by detoxifying and rejuvenate the body; not only by reducing blood sugar but also restore β cell function. Triphala is reported to have immunomodulatory, anticancer, antimicrobial, wound healing hypolipidemic anti-inflammatory, chondroprotective, radioprotective antidiabetic and antioxidant properties[25,26]. Triphala is used for Mridushodhana *(*mild purgative) and Vatanulomana purpose. Dhanvatar Ghrita formulation from Ashtang Hridaya having indication in Prameha is used for Santarpana.[27] After Mridushodhan*a*(mild laxative) with Triphala Churna*,* Santarpan (Vitalisation therapy) is required; so, the medicated ghee is selected. Vasant Kusumakar *Rasa* (VKR) is very popular Rasoushadhi mentioned in Ayurvedic Classic Rasendra Sara Sangraha in Rasayana and Vajikarana chapter. In Ayurveda *Ojas* is considered as most important factor and it may protect T cell mediated beta cell destruction. According to Ayurveda, *Oja* (essence of Dhutu) is also affected in Madhumeha (Diabetic)*,* therefore Ojo Vriddhi Rasayana Chikitsa is beneficial for this case and for this purpose *VKR* is Selected which also having specific indication in Prameha disease.VKR has been Popularly used by Ayurvedic practitioner for similar Hyperglycaemic condition. AYUSH-82 is the formulation developed by CCRAS for type 2 Diabetes mellitus after the rigorous research work and it is commercialised in the market by different brand names. IME-9 is used because it is easily available and to maintain the uniformity in the study. The outcome was measured by evaluating the clinical feature along with blood sugar and glycosylated Hb and C-peptide.

Table 1: Observations and Treatment Plan of the Patient

Date/Duration	Prognosis/ Observational Parameter	Treatment Plan
07.09.2016	C/O: - Blurry vision, Generalised weakness & headache RBS 481mg/dl	Physical examination and Counselling
08.09.2016	FBS 347 mg/dl, PPBS-413 mg/dl HbA1C was 16% C-peptide: - 0.11nmol/l	Going to AIIMS, Bhubaneswar, Insulin 12 units before meal, 8 units before dinner
After 1 Week	FBS 180 mg/dl, PPBS-256 mg/dl	(Willing to take Ayurvedic Treatment), Insulin 8 units BF-Morning & 5 units BF Night for 1 month with, Triphala Churna 10 g AF bed time, Anupana: - Lukewarm water, for four weeks
After 4weeks	FBS 87 mg/dl, PPBS-122 mg/dl HbA1C was 9% Total Cholesterol: - 216 Triglyceride: - 139 LDL: - 145 HDL: - 33 C peptide- 0.11nmol/L	Stopped insulin therapy, *VKR* -125 mg OD, Dhanwataram Ghrita- 10-gram OD BF, AYUSH-82(IME-9) 2-tab T.D.S, Anupana: - Lukewarm water, for six weeks
After10 weeks	FBS 76 mg/dl, PPBS-130 mg/dl HbA1C was 6.5% LFT & RFT within normal limits	Dhanwataram Ghrita- 10-gram OD AYUSH-82(IME-9) 2-tab T.D.S Anupana: - Lukewarm water for six weeks
After 16 weeks	FBS 76 mg/dl, PPBS-130 mg/dl HbA1C was 5.7% Total Cholesterol: - 235 Triglyceride: - 150 LDL: - 150 HDL: - 45	AYUSH-82(IME-9) 2-tabBD AF Anupana: - Lukewarm water for six weeks
After 22 Weeks	FBS 57 mg/dl, PPBS-110 mg/dl HbA1C was 5.4% C- Peptide: -2.5nmol/l	AYUSH-82(IME-9) 2 tab Once a Day BF for 4 weeks

BF: - Before Food; AF: - After Food; VKR: -Vasant Kusumakar Rasa; OD: - Once in Day; BDS: - Twice a Day; TDS: - Three times a Day

Actual Treatment Regimen and Outcome

We reduced dose of insulin to 8 units before lunch and 5 units before dinner for four weeks and prescribed along with 10 grams of Triphala Churna with lukewarm water after food at bed time for four weeks. His FBS was 87 mg/dl, PPBS was 122 mg/dl, HbA1C was 9 after four weeks of Insulin therapy on reduced dose along with 10 grams of Triphala Churna. Then we stopped insulin therapy and started VKR -125 mg OD, Dhanwataram Ghrita-10-gram OD along with Luke warm water and AYUSH-82(IME-9) 2-tab T.D.S for six weeks. Following which his FBS was 76mg/dl, PPBS was 130 mg/dl and HbA1C was 6.5 after 10weeks of Ayurveda therapy. Then VKR was stopped. Dhanwataram Ghrita-10-gram OD along with Luke warm water and AYUSH-82(IME-9) 2-tabT.D.S for further six weeks advised. His lipid profile and renal profile was observed normal along with FBS 76 mg/dl, PPBS 130mg/dl, HbA1C was 5.7after 16 weeks of *Ayurveda* regimen. Then the Dhanwataram Ghrita was stopped and only AYUSH-82 (IME-9) 2 tab two times daily before breakfast for further 6 weeks continued. The patient's FBS was brought to 57 mg/dl, PPBS was 110 mg/dl, HbA1C was 5.4 after 22 weeks of regimen of AYUSH-82 (IME-9) 2-tab BDS before breakfast. Patient was shifted to 2 Tab of IME-9 once daily before food as a maintenance dose further. C-peptide level was 0.11nmol/l before starting Ayurvedic medication, which indicates that reduction in endogenous insulin before Ayurveda medication. C- Peptide level was increased up to 2.5nmol/l after completion of Ayurveda treatment indicates that Ayurveda drugs restore the beta cell function.

DISCUSSION

Chinese traditional medicine can ameliorate insulin resistance in type 2 diabetes and it is safe and effective in newly diagnosed diabetic patients. Papers are available for Switch to oral hypoglycaemic agent therapy from insulin injection in patients with type 2 diabetes[28]. We also found in internet that Ayurveda medication can completely stopped insulin therapy after 1.5 years of therapy and blood glucose maintained[29]. But no published research paper is available in this field. We found that Ayurveda medication can show better glycaemic control even patient in switch over from insulin therapy within 21 weeks only. Triphala Churna can detoxify the system. Dhawantaram Ghrita may dissolve the amyloid deposition of pancreas which hindered the proliferation of insulin secretary cells. It also reduces the atrophy of β cells of pancreas. Vasanta Kusumakara Rasa (VKR) is helpful in lowering blood sugar by increasing plasma insulin, anti-inflammatory and decrease pro inflammatory cytokines in animal model. AYUSH-82 (IME-9) has significant glucose lowering effect. As C-peptide level was increased after Ayurveda regimen, so it can be concluded that Ayurveda medication can restore the β cells function by reducing glycosylated haemoglobin and increase the value of c peptide.

CONCLUSION

Ayurveda Oral medications are efficient and safely substitute the insulin injection therapy within 21 weeks of medication. Further study with more number of patients can be recommended.

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