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Homoeopathic management of diabetes mellitus among post-menopausal women by *Helonias dioica*: A case series

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Abstract

A sample of 15 cases of post-menopausal diabetic women from OPD of Sarada Krishna Homoeopathic Medical College and Hospital were selected, detailed case taking was done and *Helonias Dioica* in different potencies was administered as per the directions of 5th and 6th editions of Organon of medicine, including its repetition and dosage. FBS and serum HbA1c levels of the individual were measured on the first visit itself. Advices were given to follow a healthy diet. The cases were followed up for 12 weeks to obtain correct changes in serum HbA1c. FBS was analysed in follow ups of every 2 weeks and the repetition of dose, change in potency/medicine was decided based on the overall condition of the patient. After 3 months, HbA1c level was taken and in about 80% of the cases had their HbA1c levels reduced.

Keywords: Diabetes mellitus, menopause, *helonias dioica*

Introduction

Diabetes Mellitus describes a metabolic disorder of multiple aetiology characterized by chronic hyperglycaemia with disturbance of carbohydrate, fat and protein metabolism resulting from defects in insulin secretion, insulin action or both ^[1]. Serum HbA1c below 5.7% is normal; between 5.7 and 6.4% is indicative for pre-diabetes; 6.5% or higher indicates diabetes ^[2].

Menopause can be defined as the time when there was no menses for 12 consecutive months, where no other biological or physiological cause can be identified. It is marked as the end of a woman's period of fertility. The timing of natural menopause varies from 40's to 60's with an average of 50's. Factors influencing it include heredity, smoking ^[3].

Helonias Dioica is a perennial herb native to the eastern United States. It can be found in a variety of habitats, including wet meadows and deciduous woodlands ^[4]. It is regarded as a great uterine tonic. Its fresh root before flowering is used for the homeopathic medicine preparation ^[5].

Diabetes - A Global Burden

Diabetes is one of the biggest global health emergencies of the twenty-first century together with cardiovascular disease (CVD), respiratory disease, and cancer ^[15, 16]. According to the World Health Organization (WHO), noncommunicable diseases (NCDs) caused 74% of all deaths in 2019, of which diabetes was responsible for 1.6 million, making it the tenth largest cause of death worldwide ^[15]. It causes life-threatening consequences; macrovascular complications like cardiovascular (CV), cerebrovascular, and peripheral artery disease while microvascular complications like diabetic retinopathy, nephropathy, and neuropathy. Diabetic Neuropathy is characterized by sensory loss, reduced pain threshold, slow nerve conduction velocity, foot ulcers and may also lead to foot amputations. All these raise expenses for the family, the community, and the healthcare system ^[18-20]. Chronic inflammation and oxidative stress linked to diabetes increases the risk of life-threatening consequences ^[21]. The cause of slow healing wounds in type 2 DM is a combination of variables like pain and loss of sensitivity to the extremities, poor circulation, and weakened immune response ^[22]. All of these incidents result in non-traumatic limb amputation, blindness, renal haemodialysis, and heart conditions ^[23].

Menopause - A prime time for diabetes mellitus

Although menopause is a significant event in the lives of women, diabetes risk is not primarily determined by the hormonal changes associated with menopause. Contrarily, comorbidities like depression and sleep disorders, as well as midlife increases in obesity and insulin resistance, show a high correlation with chronological ageing. But this high incidence of extra body fat, insulin resistance, and conditions like sleep disorders and depression raises the risk for diabetes independently, making postmenopausal period a prime time for diabetes [28]. Diet also plays a huge role in hyperglycaemia and diabetes.

Helonias Dioica - A nature's gift lost in the sands of time

Introduced by C. V. Parr and proved by Tully, Jones, Branch and Clarke [29, 30], *Chamaelirium luteum*, false unicorn root, has traditionally been used by numerous native American tribes as well as by the Eclectic physicians for the treatment of all manner of gynaecologic conditions in which there was a lack of tone or vigour, and by the latter to regulate glandular activity. The root is adaptogenic, diuretic, emetic, uterine tonic and vermifuge. It has also traditionally been used as a stimulant for the treatment of amenorrhoea. It is also popular on Internet chat groups for women seeking Complementary and Alternative Medicine (CAM) therapies, for the treatment of a wide variety of gynaecologic difficulties, especially infertility. Due to its increased demand and difficulty in cultivation, the herb has now been recognized as an ecologically at-risk botanical and its less widely recommended while alternative herbs are preferred instead [31, 32].

Dr Herring in his book 'The Guiding symptoms to pure Material Medical' states one of the constitutions of *Helonias* as "Women: with prolapsus, from atony, enervated by indolence and luxury, > when attention is engaged, hence when doctor comes; worn out with hard work, do not care for sleep, so tired, and strained muscles burn and ache so" [33].

Dr H C Allen, in his book 'Allen's Keynote' mentions *Helonias* as indicated for Diabetes in the first stages with profuse, clear, saccharine urine; emaciation; irritability and melancholy [34].

Dr William Boericke in his *Homeopathic Materia Medica* states that symptoms of sensation of weakness, dragging and weight in the sacrum and pelvis, with great languor and prostration, are excellent indications for this remedy [14].

Homoeopathic indication of *Helonias Dioica* in diabetes

- Intense pruritus of vulva and vagina, they itch & burn terribly; reddened, swollen mucosa of labia [5].
- Saccharine diabetes [9].
- Excessive urine; Sugar and albumin in urine; unduly exhausted females [10].
- Urine: frequent desire and urging; profuse, clear, light coloured, albuminous; diabetic;
- Mouth: tongue and fauces dry – Tongue white (diabetes) [11].
- Diseases resulting from atony; prolapsus; amenorrhoea; menorrhagia; leucorrhoea; abortion; anaemia; chlorosis; diabetes; Bright's disease; dropsy, from albuminuria, general debility, uterine atony, or after uterine haemorrhages [12].

Need of the study

Over the past three decades, the worldwide burden of diabetes has gradually increased, with India bearing a substantial share of this burden [17]. The global diabetes prevalence is estimated to reach 12.2% (783.2 million) in 2045 [35]. *Chamaelirium luteum* was once widely used to treat menopausal complaints [7]. In addition to this, *Helonias Dioica* possesses antihyperglycemic and antioxidative potentials [8]. Homoeopathic literature quotes that *Helonias Dioica* is markedly indicated in the treatment of Diabetes mellitus. In Spite of all these credentials, the efficiency of *Helonias* has been kept unnoticed and thus not prescribed in Homoeopathic clinics frequently though indicated. Hence the Homoeopathic clinical effectiveness of *Helonias* in treatment of Diabetes in postmenopausal women is yet to be researched upon. On the whole, this research is taken upon to put the limelight on the effectiveness of *Helonias Dioica* in the treatment of diabetes mellitus in post-menopausal women.

According to a study conducted by Debrup Chakraborty, Asmita Samadder, Suman Dutta, Anisur Rahman Khuda-Bukhsh in January 2012 on "Antihyperglycemic potentials of a threatened plant, *Helonias Dioica*: antioxidative stress responses and the signaling cascade" concluded that HELONIAS DIOICA prevents alloxan induced islet cell damage and possesses antihyperglycemic and antioxidative potentials [8].

According to a study conducted by Judith Hsia, LieLing Wu, Catherine Allen, Albert Oberman, William E. Lawson, Javier Torr ns, Monika Safford, Marian C. Limacher, Barbara V. Howard published in American Journal of Preventive Medicine Volume 28, Issue 1, January 2005, on "Physical activity and diabetes risk in postmenopausal women" concluded that there is a stronger and more independent association of physical inactivity with development of diabetes in Caucasian women than in African-American, Hispanic, or Asian women [24].

According to another study conducted by Rita Rastogi Kalyani, Manuel Franco, Adrian S. Dobs, Pamela Ouyang, Dhananjay Vaidya, Alain Bertoni, Susan M. Gapstur, Sherita Hill Golden published in The Journal of Clinical Endocrinology & Metabolism, Volume 94, Issue 11, 1 November 2009, on "The Association of Endogenous Sex Hormones, Adiposity, and Insulin Resistance with Incident Diabetes in Postmenopausal Women" concluded that adiposity and insulin resistance explained most of the association of bioavailable Testosterone but only partially explained the associations of Oestradiol and Sec Hormone Binding Globulin with incident T2DM among postmenopausal women [25].

According to a study conducted by Qi Jin, Ni Shi; Desmond Aroke; Dong Hoon Lee, Joshua J. Joseph, Macarius Donneyong, Darwin L. Conwell, Phil A. Hart, Xuehong Zhang, Steven K. Clinton, Zobeida Cruz-Monserrate, Theodore M. Brasky, Rebecca Jackson, Lesley F. Tinker, Simin Liu, Lawrence S. Phillips, Aladdin H. Shadyab, Rami Nassir, Wei Bao, Fred K. Tabung published in Diabetes Care 2021;44:707–714, on "Insulinemic and Inflammatory Dietary Patterns Show Enhanced Predictive Potential for Type 2 Diabetes Risk in Postmenopausal Women" concluded that lowering the insulinemic and inflammatory potentials of the diet may be more effective in preventing type 2 diabetes than focusing on glycaemic foods [26].

Helonias and Menopause - Historical Perspective

According to an article by M Diana van Die published in Australian Journal of Medical Herbalism. January 2010. Vol 22. Issue 4. Pages 121-126 titled "Herbal medicine and menopause: An historical perspective" explains that Helonias Dioica is a relatively recently introduced herbal medicine in 1869 compared to all the existing herbal treatments for menopause. In 1950, oestrogenic effects of Helonias Dioica were found in animal studies^[7].

Homoeopathic therapeutic compendium of diabetes mellitus by cross repertorization

According to a paper published by Dr. Vikrant Tripathi and Dr. Ankita Acharya in International Journal of Homeopathic Sciences 2019;3(1):70-73 on "Homoeopathic therapeutic compendium of diabetes mellitus by cross repertorization" concluded that the reportorial result for diabetes mellitus related rubrics in different repertories is as Phosphoric Acid – 5 marks, Natrium Sulphuricum – 6 marks, Helonias Dioica – 6 marks, Argentum Metallicum – 6 marks, Sulphur – 6 marks, Lycopodium – 5 marks, Arsenicum Album – 5 marks, Plumbum – 5 marks, Uranium Nitricum – 5 marks^[27].

Material and Methods

Study setting

- A sample of 15 cases of post-menopausal diabetic women from OPD of Sarada Krishna Homoeopathic Medical College and Hospital.
- Detailed case taking was done and recorded in accordance with SKHMCH standardized chronic case record format. Symptom analysis has been done and HELONIAS DIOICA was selected after proper reference to Homoeopathic Materia Medica, considering the patient as a whole.
- Follow up, analysis, repetition, dosage was also done as per the directions of 5th and 6th editions of Organon of medicine.

Research design

- Single group, experimental, before and after study without control group.
- Study aimed to evaluate the extent to which Helonias Dioica is capable in reducing the HbA1c levels in diabetic post-menopausal women.
- Study was carried out at Sarada Krishna Homoeopathic Medical College Hospital.
- Data was collected according to Pre-structured SKHMCH case record format in the presence of medical officer.
- Patients were informed accurately about the study and subsequent voluntary consent for participation was obtained.
- Case taking along with physical examination and required investigation was done for the required patients.
- Fasting Blood Sugar and HbA1c were investigated before and after remedy administration.
- Results were subjected to statistical analysis and hypothesis was tested using simple paired 't-test'.

Intervention

- Case taking and medicine selection and administration

is done according to homoeopathic principle.

- Prescription was done based on the symptom similarity of the patient.
- Detection of any change in the wrong direction of treatment was immediately followed by change in potency/ change in remedy, depending on the state of the patient.
- General supportive advices were also given to patients like lifestyle modifications, healthy dietary habits, etc.
- Pre and post treatment analysis was done using HbA1c levels.

Procedure

- Randomly selected 15 diabetic cases, diagnosis based on the criteria put forward by American Diabetes Association were taken.
- The FBS and serum HbA1c levels of the individual was measured on the first visit itself.
- Brief case taking was done and totality of symptoms were elicited.
- Helonias Dioica was selected based on symptom similarity, as given in an authorised Homoeopathic Material Medical, and if indicated otherwise, the indicated similimum is given and case is opted out of study.
- The potency, dose and repetition of medicine was done according to the principles of Organon of Medicine.
- Advices were given to follow a healthy diet.
- The cases were followed up for 12 weeks to obtain correct changes in serum HbA1c.
- FBS was analysed in follow ups every 2 weeks and the repetition of dose, change in potency/medicine was decided based on the overall condition of the patient.

Selection of tools

- Analyzer method for detection of HbA1c level.
- Analyzer method for detection of Fasting Blood Sugar level.
- Pre structural SKHMCH case format.

Statically techniques and data analysis

Used simple percentage analysis, simple paired 't' test and correlation analysis. Data was represented in charts and tables for comparison and interpretation.

Ethical Issues

Ethical clearance was obtained from the ethical committee of SKHMC before the commencement of research.

Implication

- To study the effectiveness of the drug Helonias Dioica, in alleviating the symptoms of diabetes.
- To substantiate the role of this homoeopathic remedy in the treatment of diabetes.
- To obtain a better understanding on which potency of Helonias Dioica is most capable in bringing down the serum HbA1c levels.

Results

A sample of 15 post-menopausal diabetic cases attending the Outpatient Department and Inpatient Department of Sarada Krishna Homoeopathic Medical College Hospital were taken randomly for the study. All the 15 chosen cases

were followed up for 12 weeks and were considered for the statistical study. The results are presented on the basis of

data obtained from the study group is as follows:-

Table 1: Serum HBA1C levels before and after treatment

| Cases no. | Before treatment | After treatment |
|-----------|-------------------------|-----------------------|
| | Initial serum HBA1C (%) | Final serum HBA1C (%) |
| 1 | 6.2% | 6.4% |
| 2 | 9.8% | 11.8% |
| 3 | 8.3% | 6.8% |
| 4 | 12% | 8.8% |
| 5 | 7.8% | 6.6% |
| 6 | 12.8% | 11.1% |
| 7 | 11.4% | 8.2% |
| 8 | 11.4% | 10.5% |
| 9 | 11.3% | 10.6% |
| 10 | 10.3% | 9.6% |
| 11 | 8.5% | 10.6% |
| 12 | 8.8% | 7.8% |
| 13 | 11.5% | 10.6% |
| 14 | 9.1% | 8.1% |
| 15 | 9.5% | 6.9% |

Interpretation

In 15 cases, all women had their serum HbA1c levels raised above 6%. After treatment with Helonias Dioica, 12 women

experienced reduction from the initial serum HbA1c levels, the decrease varying in between 1-3%. The maximum noted difference in serum HbA1c is 3.2%.

Table 2: FBS Levels during Treatment

| Case no. | Fasting Blood Sugar (mg/dl) | | | | | |
|----------|-----------------------------|----------------------|----------------------|----------------------|----------------------|-----------------------|
| | 1 st week | 3 rd week | 5 th week | 7 th week | 9 th week | 12 th week |
| 1 | 177 mg/dl | 182 mg/dl | 180 mg/dl | 188 mg/dl | 181 mg/dl | 188 mg/dl |
| 2 | 203 mg/dl | 200 mg/dl | 210 mg/dl | 203 mg/dl | 354 mg/dl | 358 mg/dl |
| 3 | 236 mg/dl | 154 mg/dl | 210 mg/dl | 188 mg/dl | 182 mg/dl | 178 mg/dl |
| 4 | 228 mg/dl | 243 mg/dl | 238 mg/dl | 219 mg/dl | 192 mg/dl | 183 mg/dl |
| 5 | 169 mg/dl | 162 mg/dl | 155 mg/dl | 138 mg/dl | 132 mg/dl | 128 mg/dl |
| 6 | 400 mg/dl | 388 mg/dl | 382 mg/dl | 370 mg/dl | 363 mg/dl | 343 mg/dl |
| 7 | 280 mg/dl | 266 mg/dl | 258 mg/dl | 238 mg/dl | 213 mg/dl | 197 mg/dl |
| 8 | 284 mg/dl | 222 mg/dl | 210 mg/dl | 181 mg/dl | 130 mg/dl | 99 mg/dl |
| 9 | 356 mg/dl | 341 mg/dl | 342 mg/dl | 296 mg/dl | 270 mg/dl | 273 mg/dl |
| 10 | 194 mg/dl | 190 mg/dl | 182 mg/dl | 189 mg/dl | 167 mg/dl | 158 mg/dl |
| 11 | 267 mg/dl | 260 mg/dl | 272 mg/dl | 270 mg/dl | 274 mg/dl | 278 mg/dl |
| 12 | 128 mg/dl | 99 mg/dl | 150 mg/dl | 129 mg/dl | 132 mg/dl | 127 mg/dl |
| 13 | 444 mg/dl | 439 mg/dl | 402 mg/dl | 368 mg/dl | 304 mg/dl | 276 mg/dl |
| 14 | 285 mg/dl | 282 mg/dl | 270 mg/dl | 268 mg/dl | 260 mg/dl | 262 mg/dl |
| 15 | 230 mg/dl | 236 mg/dl | 214 mg/dl | 218 mg/dl | 184 mg/dl | 176 mg/dl |

Interpretation

In 15 cases, all women had their FBS levels raised above 120 mg/dl. After treatment with Helonias Dioica, 12 of them experienced reduction from the initial fasting blood sugar, the decrease varying in between 10-30 mg/dl after each follow up. Out of the 12 cases, 3 cases showed decrease in FBS value around 100mg/dl while others showed a decrease of 40-90mg/dl. 3 of them experienced an increase in fasting blood sugar levels, of which 2 were slight increase and 1 was high increase. The maximum noted difference in the fasting blood sugar levels, obtained between initial visit and last follow up is 200 mg/dl.

Table 3: distribution of cases on potency of medicine prescribed

| Potency | No. of cases |
|---------------------------|--------------|
| 200 th Potency | 5 |
| 30 th Potency | 6 |
| Q Potency | 4 |

Interpretation

In 15 cases, 5 cases were prescribed with 200th potency, 6 cases were prescribed with 30th potency and 4 cases were prescribed with Q potency.

Table 4: Distribution of cases according to presence of comorbidities

| Comorbidities | | No. of cases |
|-----------------|--------------------|--------------|
| Obesity | Obesity | 12 |
| | W/ Hyperlipidaemia | 9 |
| | W/ Hypertension | 10 |
| | W/ CKD | 2 |
| Hypertension | Hypertension | 6 |
| | W/ Hyperlipidaemia | 10 |
| | W/ CKD | 3 |
| Hyperlipidaemia | Hyperlipidaemia | 11 |
| | W/ CKD | 3 |

Interpretation

Obesity is the most prevalent comorbidity with diabetes mellitus followed by hyperlipidaemia and hypertension.

Table 5: Distribution of cases according to family history

| Family History | No. of cases |
|----------------|--------------|
| Positive | 5 |
| Negative | 10 |

Interpretation

In 15 cases, 5 cases (33%) had positive family history for diabetes mellitus and 10 cases (67%) had no family history of diabetes mellitus.

Table 6: Distribution of various potencies prescribed and difference on serum hba1c levels, before and after treatment

| S. No | HBA1C Levels Before (Minus) After | | |
|-------|-----------------------------------|--------------------------|---------------------------|
| | Q Potency | 30 th Potency | 200 th Potency |
| 1 | 1.5% | -0.2% | 3.2% |
| 2 | 3.2% | -2% | 0.9% |
| 3 | 1.0% | 1.2% | 0.7% |
| 4 | 2.6% | 1.7% | 0.7% |
| 5 | | -2.1% | 0.9% |
| | | 1% | |
| Total | 8.3% | -0.4% | 6.4% |

Average deference in HbA1c for cases prescribed with Q potency: $8.3/4 = 2.075\%$

Average deference in HbA1c for cases prescribed with 30th potency: $-0.4/6 = -0.067\%$

Average deference in HbA1c for cases prescribed with 200th potency: $6.4/5 = 1.28\%$

Average deference in HbA1c per case in the study: $(8.3+(-0.4)+6.4)/15 = 0.95\%$

Average deference in HbA1c of positive results in the study: $(8.3+3.9+6.4)/13 = 1.43\%$

Interpretation

In 15 cases, 4 cases were prescribed with Q potency and they showed an average difference of 2.075% in their HbA1c levels, before and after treatment; 6 cases were prescribed with 30th potency and they showed an average increase of 0.067% in their HbA1c level, before and after treatment; 5 cases were prescribed with 200th potency and they showed an average difference of 1.28% in their HbA1c level, before and after treatment.

Statistical Analysis

Statistical analysis was done with Paired T test of serum HbA1c levels and FBS before and after 12 weeks of treatment and got P Value < 0.05.

Discussion

Diabetes mellitus is diagnosed by elevated serum glucose levels and serum HbA1c levels. In this study, all the cases had their serum HbA1c levels, above the recommended normal limits; 12 cases (80%) were obese, 6 cases (40%) were hypertensive, 11 cases (73%) were hyperlipidaemic. Of these 9 cases (60%) were obese with hyperlipidaemic, 10 cases (67%) were obese with hypertensive, 2 cases (13%) were obese with chronic kidney disease, 10 cases (67%) were hypertensive with hyperlipidaemic, 3 cases (20%) were hypertensive with chronic kidney disease, 3 cases (20%) were hyperlipidaemic with chronic kidney disease. 0

cases (0%) had no comorbidities at all. The cases showed effects of old age accompanied with diabetes and other comorbidities. 5 cases (33%) showed positive family history of diabetes mellitus and 10 cases (67%) showed negative family history of diabetes mellitus.

30th potency was used the most in this study (40% of cases). Stuart Close [36] mentioned the significance of even the smallest of potencies where he said: "All potencies are required for the cure of disease, and any potency may be required in any given case." which was followed in this study. Q potencies were prescribed to 27% of cases. William Boericke [14], had mentions the best potency to use as "tincture to the sixth attenuation". 200th potency was prescribed to the remaining 33% of cases. 200th potency was used according to the Kentian concept that the potencies have much milder curative action than the higher and highest potencies. As said by Dr Kent, "In chronic conditions, for the first prescription, a single dry dose on tongue is the best" [37] which was also followed in this study. After 3 months HbA1c test done before and FBS test done in every follow-up, 80% of the cases had their HbA1c levels reduced with an average of 1.43% HbA1c. Out of these cases which showed reduction in HbA1c levels, 25% of cases showed marked reduction in HbA1c levels up to 3.2%, while 25% of cases showed moderate reduction in HbA1c up to 1.7% and remaining 50% of cases showed mild reduction in HbA1c levels up to 0.9%. The potencies used were Q potency (27%), 30th potency (40%), 200th potency (33%). In cases administered with 30th potency, a maximum reduction of 1.7% HbA1c was noted, with an average increase of 0.067%. In cases administered with Q potency, a maximum reduction of 3.2% HbA1c was noted, with an average reduction of 2.075%. In cases administered with 200th potency, a maximum reduction of 3.2% HbA1c was noted, with an average reduction of 1.28%.

All the cases treated with 200th and Q potency of *Helonias Dioica* showed reduction in FBS and HbA1c levels while 3 out of 6 cases treated with 30th potency did not show any reduction in FBS and HbA1c levels. Though the positive results from using Q potency can be correlated to the antihyperglycemic potential of *Helonias Dioica* [8], showing negative results from using 30th potency while showing positive results similar to Q potency from using 200th potency suggests a strong homeopathic action in reducing blood glucose levels at higher dynamic potencies.

Conclusion

Considering the global burden of diabetes and its nature in the post-menopausal demographic, the ability of Homeopathic medicine *Helonias Dioica* to reduce HbA1c levels will undoubtedly have a profound impact on the lives of millions of people around the globe. Nevertheless, as much as this looks promising, one cannot ignore the importance of preventive care, especially increased risk owing to obesity, high cholesterol levels, or a family history of diabetes. A healthy diet and daily exercise can do wonders to our health, and prevent diabetes.

Conflict of Interest

Not available

Financial Support

Not available

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