

Original Article,

Homoeopathy in Diabetic Encephalopathy

Dr. Tridibesh Tripathy¹, Shankar Das², Dharmendra Pratap Singh³, Dr. Umakant Prusty⁴, Dr. Jeevan Krushna Pattanaik⁵, Dr. Pramod Bihary Pradhan⁶, Dr. S.N.Pandey⁷, Ms. Sanskriti Tripathy⁸, Mrs. Anjali Tripathy⁹, Rakesh Dwivedi¹⁰, Dr. Mohini Gautam¹¹

¹Department of Social Work, Lucknow University, Lucknow, UP, India.

²Dean, Academic Matters & Head, Sakshyam Project, Tata Institute of Social Sciences, Mumbai & Former Director, IIHMR, Delhi.

³Centre of Research Methodology, Tata Institute of Social Sciences, Mumbai

^{4,7}Regional Research Institute (Homoeopathy), Puri, Odisha under Central Council for Research in Homoeopathy, Ministry of AYUSH, Government of India.

⁵Dr. Abhin Chandra Homoeopathic Medical College & Hospital, Bhubaneswar, Government of Odisha.
^{6,10,11}, Directorate of AYUSH, Government of Odisha, Bhubaneswar.

⁸Ind year student, B.Tech in Biotechnology, Bennet University, Greater Noida, Uttar Pradesh.

⁹Senior Program Manager, LLF, Lucknow & former employee of International agencies such as Catholic Relief Services & Water Aid.

Abstract:

People usually know Type 1 diabetes & Type 2 diabetes. The current article deals with Type 3 diabetes. Gradually, the common man is getting aware about the emerging brain issues in diabetic individuals. This is 'Diabetic Encephalopathy' or the Type 3 diabetes.

The article discusses the History, Patho Physiology, Epidemiology, Burden of the disease in India. Thereafter, the article explores the role of Homoeopathy of the AYUSH ministry in dealing with the problem. The article gives a suggestive treatment protocol based on Homoeopathy.

Finally, the article focuses upon the 'cost effectiveness', 'clinical effectiveness' & 'zero side effects' qualities of Homoeopathy. Hence, its use on a mass scale to deal with the ensuing diabetic related encephalopathy is discussed at the national level.

Keywords: Type 3 diabetes, Homoeopathy, Encephalopathy, NFHS, Miasms

Introduction:

An unheard condition related to diabetes is the condition of 'Diabetic Encephalopathy'. As it is unheard, it is a potential silent threat to diabetic individuals. 'Diabetic Encephalopathy' means brain damage caused by both types of diabetes i.e. Type 1 & Type 2 diabetes. The term 'Diabetic Encephalopathy' was first coined in 1950 to explain the cognitive issues resulting from diabetes. De Jong described the term 'Diabetic Encephalopathy' in 1950. [1]

'Encephalopathy' means pathology of the entire brain. It is a broad term used for brain damage due to various diseases. A study published in the year 2005 cites that irregular regulation of Insulin & Insulin like Growth Factors (IGF) leads to

dementia such as Alzheimer's disease was first proposed as Type 3 diabetes. [3]

Often, diabetic encephalopathy leading to the precipitation of Alzheimer's is usually & loosely coined as Type 3 diabetes. [3] The following section deals with the related epidemiology of the condition at national & global levels.

Epidemiology of Diabetes:

The second largest numbers of diabetics are Indians across the globe. It is estimated that over 74 million Indians were diagnosed with diabetes in 2021. The trend says that it is expected to rise to over 124 million by 2045. From among all the diabetics, Type 2 diabetes accounts for over 90% of all diabetic cases in India. [10]

The health ministry of India indicates that around 101 million people, comprising 11.4% of the total population currently have diabetes. Further, 136 million people or 15.3% of the total population may have pre-diabetes. These pre diabetic cases can progress to diabetes within the next five years or by 2028. Thus, the situation is alarming & can be aptly termed as a 'diabetes epidemic'. To make things simple to understand, we can say that diabetes affects approximately one in every 11 adults globally. [11]

Patho-Physiology

The development & causes of Type 1 & Type 2 diabetes related encephalopathy are entirely different. When Type 2 diabetes is chronic & long standing, Alzheimer's disease is usually linked to insulin resistance. In this condition, the body has too much insulin & the condition is called hyperinsulinemia. Simultaneously, the body has excess sugar in the blood as well. This condition is called hyperglycemia. [2 to 8, 12,14,15,16]

These two conditions are often associated with other health issues like high cholesterol levels. This condition is called hypercholesterolemia thus affecting the heart of the diabetic individual as well. Type 2 diabetes related encephalopathy is usually associated with high blood pressure/hypertension & obesity. [2 to 8, 12,14,15,16]

Type 1 diabetes related encephalopathy can affect learning abilities; hinder intellectual development & poor memory. Thus, the performances in school & work become poorer. The Blood Brain Barrier (BBB) that serves as a protective shield of tiny blood vessels lined with endothelial cells. The task of BBB is to keep harmful substances in the blood away from the brain while allowing essential nutrients from the blood stream to pass through. [2 to 8,12,14,15,16]

In diabetic individuals, uncontrolled diabetes can weaken the BBB over time thus making it easier for harmful substances to enter the brain. These are further confirmed by clinical studies while showing that severe diabetic individuals experience issues with blood vessels in their brains. [2 to 8, 12,14,15,16]

The precise mechanism of disease manifestation in the BBB is not well understood. On molecular level, studies have established that enlarged gaps in specialized structures of BBB known as 'tight junctions' in diabetes encephalopathy with tandem loss of tight junction proteins such as ZO-1 & Occludin. These two tight junctions behave like

security guards that keep harmful substances far from the brain. [2 to 8,12,14,15,16]

Oxidative & Nitrosative stress, harmful molecules that damage cells & tissues play a significant role in causing diabetic brain problems or diabetic encephalopathy. Malfunctioning brain astrocyte cells in the brain & spinal cord contribute to weakening the BBB thus leading to brain swelling in uncontrolled diabetes. During food digestion, 'Lactate', a chemical is made by the body. Excess of lactate is linked to diabetes. The astrocyte cells of the brain produce lactate & it can accumulate in the brain especially when insulin does not function properly. The trouble is compounded when the body has issues in using the insulin because of diabetes. Hence, all these processes worsen the brain problems in diabetes. [2 to 8,12,14,15,16]

Clinical Features

Diabetic encephalopathy causes cognitive impairments that involve issues with BBB, tight junctions, oxidative stress & brain astrocyte cells. People with long standing Type 2 diabetes, insulin resistance, high blood sugar are more prone to high cholesterol, hypertension & obesity. [2,3,9,12,14,15,16]

Type 1 diabetic encephalopathy can affect learning, intellectual development, poor memory & difficulty in doing daily life activities. [2,3,9,12,14,15,16]

Way Ahead

Although diabetic encephalopathy is a silent threat, knowledge & pro active measures can empower diabetic individuals to protect their brain health in the face of diabetes. The key lies in comprehending the importance of controlling diabetes, adopting a healthy life style, managing blood sugar levels are critical in preventing or delaying the onset of diabetic encephalopathy. [2,9,12,14,15,16]

Clinical studies have demonstrated that Omega 3 & 6 Poly Unsaturated Fatty Acids (PUFA) supplementation holds promise in ameliorating diabetic encephalopathy. [8]

Homoeopathic Approach

There are two types of diabetes, one is diabetes mellitus & the other is diabetes insipidus. Here, both are discussed. [9]

The main reference book that the article considers is the 'Concise Repertory of Homoeopathic Medicines by Dr. Shankar Raghunath Phatak (1896-1981), M.B.B.S. who practiced Homoeopathy in Pune, Maharashtra. He did his

Medical Graduation from Grant Medical College, Mumbai. [19]

The lead author has picked up the drugs that are mentioned in capital letters under diabetes in the above-mentioned book. These are the drugs that act in high sugar levels thereby preventing encephalopathy. This encephalopathy leads to Central Nervous System (CNS) related issues. The drugs are Bovista, Helonias, Phosphorus, Phosphoric Acid, Tarentula, Terebinth & Uranium Nitricum. [19]

It is a degenerative process in the brain that occurs due to Hyperglycemia. Hence, the drugs under the rubric ‘Degeneration, Softening’ are mentioned here. These are ‘Argentum Nitricum’, ‘Aurum Met’, ‘Baryta Carb’, ‘Causticum’, Phosphorus’, ‘Plumbum Met’, ‘Silicea’, ‘Strychninum’, ‘Syphilinum’, ‘Zincum Met’, ‘Zincum Phos’. [19] Besides the potency medicines, the mother tinctures of Indian drugs can also be prescribed. Encephalopathy is the leading cause of cognitive issues here & because of encephalopathy, the nerves get weakened & brain related issues occur. Hence, the medicines that cover both diabetes & brain issues are to be prescribed. Under these two conditions, Indian drugs like “Brahmi”, ‘Cannabis Indica’, ‘Ginkgo Biloba’, ‘Ginseng’ & ‘Aswagandha’ can be prescribed in mother tinctures. [17, 19, 21]

The potency medicines mentioned in Allen for memory issues are ‘Anacardium’, ‘Cannabis Indica’. [20]

Besides, the specific drugs for Diabetes Mellitus like Arsenic Bromide, Alloxan, Phaseolus, Phlorizin can also be prescribed. [17 to 26]

In cases of Diabetes Insipidus, drugs like ‘Abroma Augusta’, ‘Acid Phos’ & the Biochemic medicine ‘Five Phos’ can be prescribed. [17 to 26]

For prevention of uncontrolled sugar levels & encephalopathy, Miasmatic prescribing should be done by the homoeopath based on the predominant Miasm in each case. [17 to 26]

Burden of Disease:

Table 1- Prevalence of Blood Sugar among adults in India [13]

| Indicator | Gender | Urban | Rural | Total |
|---|--------|-------|-------|-------|
| Percentage of Women age 15 years and above who have high blood sugar level (141-160mg/dl) | Female | 6.7 | 5.9 | 6.1 |
| Percentage of Women age 15 years and above who have | Female | 8.0 | 5.5 | 6.3 |

Whenever issues like ‘strokes’ occur, emergency medicines like ‘Ammon Mur’, ‘Lycopodium’ & ‘Zincum Met’ are to be prescribed as these are mentioned under the rubric Brain, Paralysis of, Incipient. [19] The classic combination of Carbo Veg & Aconite can also be prescribed if the case has heart & hypertension issues.[19] Another classis combination in heart issues is the combination of Cactus, Crataegus & Glonoine mother tinctures can be used [17 to 26]. The point is that the diabetic, heart & brain patients should carry these emergency medicines always with them. [17 to 26]

It is also equally critical to keep the Bach flower remedy known as ‘Rescue Remedy’ as these patients can be saved from heart attacks & brain strokes as well. The homoeopath can prescribe a single or a combination of the remedies from among all the 38 Bach Flower remedies that are prescribed for nervous system. [17 to 26]

Another preventive & curative medicine is the Bowel Nosode ‘Dysentery Compound’ which is also a Heart Nosode. Besides these the homoeopath should choose the appropriate Bowel Nosode after selecting the ‘Polychrest’ based on the ‘Generalities’ of each case. [17 to 26]

As the entire process is of inflammation inside the body, anti inflammatory medicines like ‘Prednisone’, ‘Cortisone’, ‘Hydrocortisone’. ‘Curcuma Longa’ in potencies has to be prescribed.[17]

As mentioned above about the benefits of Omega 3 & 6 fatty acids, in Homoeopathy, the drug ‘Oleum Jecoris Assellis’ can be prescribed in mother tincture & in trituritions as a specific drug.[17]

Another two specific medicines are ‘Lithium Carb’ in trituritions & ‘Chromium’ in potencies. The former drug is prescribed in brain issues & the later in diabetes. [9,17]

| | | | | |
|--|--------|------|------|------|
| very high blood sugar level (>160mg/dl) | | | | |
| Percentage of Women age 15 years and above who have high or very high blood sugar level(>140mg/dl) or taking medicine to control blood sugar level | Female | 16.3 | 12.3 | 13.5 |
| Percentage of Men age 15 years and above who have high blood sugar level (141-160mg/dl) | Male | 7.8 | 7.0 | 7.3 |
| Percentage of Men age 15 years and above who have very high blood sugar level (>160mg/dl) | Male | 8.5 | 6.5 | 7.2 |
| Percentage of Men age 15 years and above who have high or very high blood sugar level(>140mg/dl) or taking medicine to control blood sugar level | Male | 17.9 | 14.5 | 15.6 |

This reflects the magnitude of the problem in the country from the perspective of NCDs as diabetes is a metabolic disorder with an altered biochemistry in the body. The data shows that males are more diabetic than females in India. [13]

Currently, the Crude Death Rate includes Non Communicable Diseases (NCD) deaths and this trend is catching up as NCDs have the upper hand than the Communicable Diseases (CD) as a result of epidemiological transition. Diabetes is one such NCD with an improper CNS/brain in affected people. [13]

In India, Homoeopathy is the third preferred system of treatment after Allopathy and Ayurveda. About 10% of the populations depend on Homoeopathy for their health issues.

Homoeopathy is used by 10% of the population in India. So, out of the 1300 million populations, 130 million use Homoeopathy or 130 million use Homoeopathy for their health issues. These 130 million consist of all age groups i.e. infant to old age. [30]

A section among the 15+ age group suffers from diabetes as per NFHS 5. Considering that, it is 2/3rd of the population in India (15-65+ year age group) or 100 crore or 1000 millions. Out of these 100 crores, 27% adults are diabetic or about 27 crores are diabetic. These people are at risk from the rest 73 crores. As 130 million use homoeopathy, 2/3rd of the users will be in 15-65+ year age group or 98 million. So if homoeopathy is integrated in to the diabetic battle in India, 98 million people can be saved from being complicated diabetic cases or diabetic encephalopathy cases. Application of these concepts in homoeopathy will reduce brain & heart issues due to diabetes & this step will be a boon for the nation. [30]

Conclusion:

As all drugs in homoeopathy have a group of mental as well as physical symptoms, Homoeopathy is and will be effective against all brain/encephalopathy diseases in general as it takes care of not only the mental/psychological issues but also the internal inflammation as well.

However, it should be also seen that along with constitutional/deep acting/polychrest Homoeopathic medicines, specific medicines that cover all aspects & complications of diabetes are also required to deal with the cases. [14,17,24]

It should be ensured that nutrition, counseling, physical activity and all psychic health modalities like life style modification, diet and stress reduction are adhered in each case. In fact, the detailed Materia Medica of Homoeopathy has drugs for each of the phenomenon or complications that occur in the body during the hyperglycemia stage. Hence, as a part of treatment for diabetes, the supportive therapy like reading, socializing, mobilizing activities are to be prioritized in each case for optimal brain health. [15,16,17]

To get optimal results, the Homoeopathic fraternity should be ready to cover the diabetic cohort among masses as there is no other therapeutic system that can cover the masses effectively both therapeutically & economically. Homoeopathy can play an active role currently as the diabetic situation is already complicated by the Long COVID 19 issues in the community since the last 4 years. [27,28,29]

Declaration of the lead author

Prof. Shankar Das, a co-author of the current article was the Ph.D. guide of the lead author at Tata Institute of Social Sciences, Mumbai. Prof. D.P. Singh was the teacher of the lead author at TISS, Mumbai during 1995-1997. The lead author also certifies that he has expressed his personal opinion based upon his public health and clinical experiences. The treatment approach or the medicines suggested are only suggestive in nature.

Acknowledgement

The lead author thanks Dr. Umakant, Dr. Pramod, Dr. Jeevan & Dr. Pandey for their inputs in the Homoeopathic section and all the other co-authors for their inputs in the Non-Homoeopathic section.

Financial support and sponsorship

Nil

Conflict of interest

Nil

References:

[1] Nielsen E R & Lundbaek K, Diabetic Encephalopathy, Chapter 57, Patho-Physiology & Clinical Considerations, pp 719-725, Springer, Berlin, Heidelberg. ISBN: 978-3-642-47671-6 (P).

- [2] Upadhayaya R S, Type 3 diabetes may lead to cognitive problems, TOI, Lucknow Edition, Sunday, Page 2, October 15th, 2023.
- [3] De la Monte S M, Wands J R, Review of Insulin & Insulin like Growth Factor expression, signaling & malfunction in the CNS: relevance to Alzheimer's disease. J Alzheimer's Dis.2005;7(1):45-61.
- [4] Dong M et.al. analysis of metabolic alterations related to pathogenic process of diabetic encephalopathy in rats. Frontiers in Cellular Neuro Science, 14 Jan, 2019.
- [5] Majumdar D & Singh S, diabetic encephalopathy: role of oxidative & nitrosative factors in Type 2 diabetes, Indian Journal of Clinical Biochemistry, 16 Dec, 2022.
- [6] Wang C et.al. diabetic encephalopathy causes the imbalance of neural activities between Hippocampal Glutamatergic Neurons & GABAergic Neurons in Mice, Brain Research, v1742, Sept 1, 2020, 146863.
- [7] Mijnhout G S et.al. diabetic encephalopathy: a concept in need of a definition. Diabetologia 49, 1447-1448, 2006.
- [8] Diaz-Gerevini G T et.al. diabetic encephalopathy: beneficial effects of supplementation with fatty acids omega 3 & nordihydroguaiaretic acid in a spontaneous diabetes rat model, Lipids health dis, 2019;18:43, February 8th.
- [9] Davidson, Principles & Practice of Medicine, ELBS 16th Edition, Longman Group (FE) Limited, ISBN- 0-443-04482-1.
- [10] Statista, diabetes in India, statistics & facts, <https://www.statista.com>
- [11] Anjana R M et.al. metabolic non-communicable disease health report of India: the ICMR-INDIAB national cross-sectional study (ICMR-INDIAB-17), the lancet diabetes & endocrinology, v11,i7,pp474-489, July 2023.
- [12] Tortora GJ: Sandra RJ, Principles of Anatomy & Physiology, 7th Edition, Harper Collins College Publishers, 1992, ISBN:0-06-046702.
- [13] IIPS and ICF.2021. NFHS 5, 2019-2021: India:volume 1, Mumbai:IIPS.
- [14] Tripathy T et.al. Bowel Nosodes of Homoeopathy in Colorectal Cancer & Auto Immune, Metabolic, Neuro Psychiatric disorders, Scholars Journal of Applied Medical Sciences, v11i09.014, 2023.

- [15] Park JE, Park K, Text book of preventive & social medicine, 11th edition, 1987, M/s Banarasi Bhanot publishers, Jabalpur.
- [16] Singh M & Saini S, Conceptual Review of Preventive & Social Medicine, second edition 2019-2020, CBS publishers & distributors Pvt Ltd, ISBN-978-93-88725-84-2.
- [17] Murphy R, Lotus Materia Medica, 3rd edition, B. Jain publishers (P) Ltd, 2017, ISBN-978-81-319-0859-4.
- [18] Murphy R, Homoeopathic Medical Repertory, 3rd edition, B. Jain publishers (p) Ltd, 2017, ISBN-978-81-319-0858-7.
- [19] Phatak SR, A Concise Repertory of Homoeopathic Medicines, B. Jain publishers (P) Ltd, 2002, Reprint edition, ISBN-81-7021-757-1.
- [20] Allen, H C, Key notes and characteristics with comparisons of some of the leading remedies of the Homoeopathic Materia Medica with Bowel Nosodes, Reprint edition, B. Jain publishers Pvt. Ltd, 1993, ISBN-81-7021-187-5, book code, B-2001.
- [21] Boericke William, New Manual of Homoeopathic Materia Medica with Repertory, reprint edition, 2008, B. Jain publishers private limited, New Delhi, pages- 362-366, ISBN- 978-81-319-0184-7.
- [22] Hobhouse Rosa Waugh, Life of Christian Samuel Hahnemann, B. Jain Publishers Private Ltd, Delhi, Reprint Edition 2001, ISBN- 81-7021-685-0.
- [23] Paterson J, Introduction to bowel Nosodes, Paper presented at International Homoeopathic League council, Lyons, France, 1949: as an addendum in H.C. Allen Key Notes, Reprint Edition, 1993.
- [24] Sarkar B K, Organon of Medicine by Hahnemann, M. Bhattacharya & Co. 1st edition 1955, 8th edition, 1984.
- [25] Phatak D S & Phatak S R, Repertory of the Bio-chemic medicines, B. Jain Publishers (p) Ltd, 2006 edition, 1st edition 1986. ISBN- 81-7021-723-7.
- [26] Boedler CR, applying Bach flower therapy to the healing profession of Homoeopathy, B. Jain publishers(p) Ltd, reprint edition 1998, 1st edition 1996. ISBN-81-7021-786-5.
- [27] NLEM, GOI, PIB, 13th September 2022, <https://pib.gov.in>
- [28] Tripathy T et.al, Homoeopathy in COVID-19, A treatment protocol for second and third wave, Sch Int J Tradit Complement Med 4(6):86-90.
- [29] GOI, Ministry of AYUSH, NLEAM, 8 February, 2022.
- [30] Popularity of Homoeopathy in India, bjainpharma.com/blog/popularity-of-homoeopathy-in-India, 2023.



Open Access This article is licensed under a

Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license, and indicate if changes were made. The images or other third-party material in this article are included in the article's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this license, visit <https://creativecommons.org/licenses/by/4.0/>.