



## An explorative study on therapeutic potential of Homoeopathic medicine Lecithin

1. Dr Zankhana Desai, Professor and H.O.D. Department of Community medicine, Jawaharlal Nehru Homoeopathic Medical College, Parul University. PhD Scholar, Faculty of Homoeopathy, Parul University. zankhanap.zd@gmail.com
2. Dr Ketan Shah, Professor, Department of Homoeopathic Materia Medica Ahmedabad Homoeopathic Medical College, Parul University, drketan@happyhealthzone.com

### Abstract:

Lecithin is a phospholipid found in all cells of human beings and has a vital role in metabolic processes and neurological function. Lecithin is used for a variety of pharmaceutical applications, nutritional formulations, and liposomes for drug delivery. It is also indicated to improve physical and mental performance, prevent liver diseases, and reduce cholesterol levels. In Homoeopathy Lecithin, a dynamized homoeopathic medicine is indicated for various nutritional disorders, to improve the general state of health, for insomnia and sexual weakness. Being partially proven medicine is described for limited clinical conditions in homeopathic materia medica. Though such medicine has the potential for definite therapeutic utility it lacks literature pieces of evidence. This cross-sectional survey is an attempt to explore the actual prevailing clinical utility of this medicine by Homoeopathic Physicians. Survey data were collected by an intended questionnaire. Study inference showed valuable therapeutic usage of medicine for, nutritional disorders, sleep disorders, ill effects of mental and physical exertion, generalized weakness, improving lactation, lipid disorders, muscular disease, and organ affections. This survey information will enhance the literature part on the therapeutic usage of this medicine and a base for further research studies to corroborate its medicinal action.

Keywords: Lecithin, homoeopathic medicine, clinical utility.

## 1. Introduction

### 1.1 Lecithin overview

In 1846, lecithin was collected for the first time from eggs. Therefore, its name is derived from the Greek word "Lekithos," meaning egg yolk. Among chemists, lecithin is known as phosphatidylcholine.

Lecithin is a phospholipid consisting of glycerol with three carbon atoms, which forms the backbone of this yellow-brown fatty substance. Two fatty acids attach to carbon atom numbers one and two, while the phosphate group attaches to carbon atom number three, and choline attaches to the phosphate group. In lecithin, the fatty acid components vary depending on the number of carbon atoms they carry, and their degree of saturation influences their biological role. Lecithin in which both fatty acids are saturated helps in

oxygen uptake in the lungs, whereas lecithin with two unsaturated fatty acids is involved in transporting cholesterol in the blood.<sup>1</sup>

Lecithin has one polar portion, or head, that can readily dissolve in water, and another non-polar portion, or tail that is not soluble in water. Lecithin is necessary for the synthesis of lipoproteins. Since fats cannot dissolve in water, they are transported in the blood with the help of spherical particles called lipoproteins. These particles can remain in a watery solution because their outer layer consists of water-friendly proteins, cholesterol, and phospholipids, while fats make up their core, which is not exposed to the water solution. A deficiency of lecithin leads to an increased level of blood cholesterol and fat accumulation in the liver, eventually causing atherosclerotic changes and fatty liver.

Lecithin is an important membrane phospholipid required for the structure of cell membranes. Without it, a cell is unable to maintain its structure and may dissolve in its surroundings. Lecithin is vital for life, as it is a structural molecule found in all cells. Both plant cells and animal cells produce it.

Numerous studies show that lecithin is involved in cell signalling, a process in which one cell initiates changes in another. Lecithin is a primary source of choline, which is the precursor of the neurotransmitter acetylcholine. Recent findings from studies have reported a relation between the lack of lecithin in nerve cells and the progression of Alzheimer's due to the inability to produce acetylcholine. Lecithin is useful for treating memory loss, depression, high blood cholesterol, liver diseases, and as a moisturizer.

Phosphatidylcholine, a major component of lecithin, is the biosynthetic precursor of sphingomyelin, phosphatidylethanolamine, lyso-phosphatidylcholine, and platelet-activating factor. Vegetable or animal tissue serves as sources of lecithin, with egg lecithin and soy lecithin being particularly important.

In the pharmaceutical industry, it is used as a stabilizing agent for emulsification and encapsulation. It is also utilized as a food additive to aid in achieving a homogeneous mixture of ingredients and improving the shelf life of food products. As a natural emulsifier and antioxidant, lecithin is added to cosmetics.

In modern medicine, many researchers have conducted studies to explore the applicability of lecithin-phosphatidylcholine in treating lipid metabolism disorders, dementia, and irritable bowel disease.

### *1.2 Lesser-known Homoeopathic medicines*

Homoeopathy is a therapeutic system of medicine based on the principle of "Like cures like," or "Similia Similibus Curentur." In homoeopathy, the treatment of a patient is carried out by administering medicine that has the power to produce a similar type of illness in a healthy

human being. Based on the similarity of symptoms, a suitable medicine is prescribed to the patient, considering the principles of using a single medicine and the minimum effective dose.

The aim of homoeopathy is to use the smallest possible amount of medicine to elicit the required therapeutic action while avoiding any toxic effects. The process of potentization, used to prepare homoeopathic medicines, helps eliminate potential harmful effects that might be present in their crude form. Potentization enhances the latent curative potential of the medicines while reducing their chemical properties. Potentised homoeopathic medicines contribute to enhancing the immune system, enabling the human body to engage in self-preservation.

In preparing homoeopathic medicines, only a small quantity of the original drug substance is necessary. While the basic sources of the drugs used in homoeopathic medicines may be similar to those in other systems of medicine, the preparation and therapeutic application differ. These sources include herbs, animal or animal products, minerals, diseased products or tissues, healthy tissues or products, and imponderables.

The curative effects of medicines are understood through the process of drug proving on healthy human beings of different age groups, sexes, and constitutions. Some of the curative effects are discovered through clinical use. According to the principles of homoeopathy, a medicine will only cure a disease if it is capable of producing similar symptoms in a healthy person. Homoeopathy focuses on treating the patient rather than the disease by its name. Medicines with well-known pathogenetic actions are known as polycrest medicines. These medicines are often prescribed for both acute and chronic diseases, as well as constitutional remedies. On the other hand, medicines with less widely understood pathogenetic actions are referred to as rare or lesser-known medicines. These medicines are symptomatically indicated for specific diseases or organ affections. They play a crucial role in treating patients with one-sided diseases, specific pathological conditions, advanced stages of diseases, or for palliation.

### 1.3 Sarcodes

Sarcodes are homoeopathic drug substances obtained from healthy animal secretions or tissues. They contain biological particles that have specific physiological functions in the human body. These medicines are used to correct diseased organs, glands, and tissues. They are prepared from identical healthy organ, glandular, and tissue extracts through dilution and dynamization, following homoeopathic principles. The potentization of Sarcodes reveals the inert properties and natural healing energy that support organ functions and recovery. A few examples of sarcodes are Adrinalin, prepared from secretions of the suprarenal gland; Cholesterinum, from the epithelial lining of the gall bladder and larger ducts; Lac Caninum, from dog's milk; Lac Defloratum, from skimmed milk; Oophorinum, from ovarian extract;

Thyroidinum, from dried thyroid gland of sheep; and Lecithin, from yolk of egg and animal brain.

Sarcodes are indicated to support the function or structure of an organ in a diseased condition when finding a constitutional medicine is difficult due to a paucity of symptoms.

Lecithin, a homoeopathic medicine, is prepared from egg yolk and animal brain. The drug material is collected while avoiding contamination, even from associated tissues and secretions. Information about Lecithin's drug description and preparation is mentioned in the Encyclopaedia of Homoeopathic Pharmacopoeia.<sup>2</sup>

#### 1.4 Lecithin Homoeopathic Medicine

Lecithin homoeopathic medicine, a Sarcodes, is prepared from the yolk of an egg or animal brain. It contains complex organic material containing phosphorus. It is partially proved medicine, and most of its therapeutic indications are known through a clinical approach.

Therapeutic indications of Lecithin primarily appear in the Pocket Manual of Homoeopathic Materia Medica and Repertory.<sup>3</sup> This Materia Medica book provides an accurate and reliable collection of verified indications of Homoeopathic Medicine along with clinical suggestions.

The indications of Lecithin, as described in the materia medica, are for anaemia, insomnia, convalescence, and neurasthenia. This medicine has shown a favourable influence on nutritive conditions, especially on blood. It improves haemoglobin levels and the number of red blood cells.<sup>4,5</sup>

Neurasthenia is a term used to define chronic fatigue conditions, nervous debility in the absence of an objective cause. It is characterized by symptoms of dizziness, headaches, muscular pains, inability to relax, difficulty concentrating, sleep disturbances, and memory loss. These symptoms are often found in busy individuals or people in today's modern society.

Lecithin is beneficial during lactation; it has been shown to increase breast milk secretion and improve nourishment quality. It is indicated for nutritional improvement in cases of Tuberculosis during the recovery phase.

It supports improvement in the general state of health when taken during the convalescent period of diseases. Indicated symptoms of this medicine for general breakdown include feelings of tiredness and weakness, shortness of breath, loss of flesh, loss of appetite, digestion disturbances, bloated abdomen, and sore pain in the stomach that rises up to the throat. There is an increase in thirst and a desire for wine and coffee.

In males, it is indicated for complaints of enfeebled or loss of sexual power. In the case of females, it is indicated for diminished sexual desire and ovarian insufficiency.

It is indicated for urinary complaints where urine is scanty with phosphates, sugar, or albumin. It has shown an immediate decrease in the excretion of phosphates.

A high level of phosphates in urine is mostly due to a high level of vitamin D, an overactive parathyroid gland, high phosphate diet intake, low dietary intake of potassium, and certain kidney diseases. Other causes of phosphaturia include starvation, gastrointestinal malabsorption, reduced nutrition, diabetes mellitus, high urinary loss due to tubular dysfunction, and the use of phosphate binders.

The regulation of phosphate excretion depends on its reabsorption at the proximal tubules of the kidney. Ethanol and glycosuria have been found to decrease proximal tubule phosphate reabsorption. Diuretic drugs, especially those affecting proximal tubules like acetazolamide and thiazides, cause high phosphate levels in urine.<sup>6</sup> Manifestations of phosphate depletion are seen in different organs due to a decrease in intracellular ATP and a decrease in the availability of oxygen to the tissues.<sup>7</sup>

Symptoms of phosphate deficiency include bone pain, joint pain, anxiety, irregular breathing, fatigue, numbness, weakness, loss of appetite, weight loss, and irritability.

## **2. Literature Review**

Upon conducting a literature search, a study was discovered that reported on the efficacy of Lecithin in managing iron deficiency anaemia in adolescent girls. This study was a randomized placebo-controlled trial involving 50 participants, and it demonstrated a significant improvement in haemoglobin levels.<sup>8</sup>

Another study, conducted by Lenger K and Struck Lab, and titled "Homoeopathic remedies regulate pathological pathways in patients with endocrine cancer," mentioned Lecithin for its indication in regulating fat pathways.<sup>9</sup>

In his book titled "Cardiovascular Diseases and Homoeopathic Treatment," author Balakrishnan E elaborated on Lecithin's benefits in fat digestion and oxidation, ultimately leading to improvements in physical, mental, and glandular activities.<sup>10</sup>

Homoeopathic medicinal preparations, whether used solely or in combination with Lecithin, are employed for managing conditions such as anaemia, weakness, insomnia, nutritional disorders, lactation improvement, and as antioxidants, among other applications.

The primary aim of this study is to delve into the therapeutic utility of the Homoeopathic medicine Lecithin.

## **3. Methodology**

In May 2022, a brief cross-sectional survey was carried out to gather insights into the clinical utilization of the Homoeopathic medicine Lecithin. The data collection process involved the use of a custom-designed questionnaire tailored for this particular survey. The questionnaire was distributed to a community of Homoeopathic practitioners through the social media

platform WhatsApp, utilizing a Google Form link. Descriptive statistics were employed to present information regarding the usage of this medicine.

Participation in the survey was entirely voluntary, and participants were given the assurance that their identities would be kept confidential. They were also provided with a clear explanation of the survey's purpose.

#### 4. Results and summary

From the total 172 shared link 37 Homoeopathic practitioners responded (21.5%) about the use of this lecithin medicine in their clinical practice.

Table 1: Distribution of participants

		Male	Female
Total		20	17
Mean Age(years)		48.65	37
Educational level	Bachelor Degree	8	7
	Master Degree	11	10
	Doctorate Degree	1	*
Clinical Experience(Years)	01 to 10	3	3
	11 to 20	6	7
	21 to 30	8	7
	Above 30	3	*

Thirty-one participants had clinical experience in Homoeopathy for more than 10 years.

Table 2: Clinical condition treated with Homoeopathic medicine Lecithin

Sr. No.	Clinical conditions	Responses
1	Anaemia	31
2	Forgetfulness	5
3	Insomnia	9
4	Nutritional conditions	22
5	Blood disorders	13
6	Emaciation/wasting	14
7	Ovarian insufficiency	3
8	Lipid disorders	6
9	Kidney disease	3
10	Improving Lactation	4
11	Muscular Dystrophy	2
12	liver disease	1
13	Over mental exertion	1
14	General weakness	1
15	Adynamia	1

In the survey responses, it was found that 31 participants reported using Lecithin for anaemia, 22 participants indicated its use for nutritional disorders, 14 participants mentioned its application for emaciation/weakness, and 13 participants reported using it for addressing blood disorders. It was also indicated for various other conditions, including forgetfulness, insomnia, mental exertion, improving lactation, ovarian insufficiency, and adynamia. Additionally, it was utilized for managing lipid disorders, kidney and liver diseases, as well as for addressing inherited diseases affecting muscles such as muscular dystrophy. However, detailed descriptions of clinical conditions for which this medicine was used were not collected from respondents in this survey.

When it comes to the effectiveness of using Lecithin medicine, 24.45% of the respondents reported that they found it effective all the time when they used it. Additionally, 51.2% of participants mentioned that they usually found it effective. Furthermore, 24.4% responded that they experienced effectiveness sometimes. It's notable that none of the participants indicated that Lecithin was ineffective. Moreover, there were no responses suggesting unfavourable effects from the use of Lecithin medicine according to Homoeopathic guidelines.

## **5. Discussion**

Lecithin is not a completely proven homoeopathic medicine; its therapeutic value is mostly understood through a clinical approach. It is considered a lesser-known remedy. The therapeutic indications of this medicine, as described in source books of materia medica, mainly revolve around nutritional conditions during convalescence, neurasthenia, insomnia, forgetfulness, and its use as a galactagogue. Moreover, its description also hints at possible benefits in managing conditions like diabetes mellitus, malignancy, wasting diseases, and lifestyle disorders, although these aspects have not been thoroughly explored yet. Apart from the study involving Lecithin in iron deficiency anaemia, no other specific clinical research has been reported.

Based on this survey, it is evident that Lecithin is frequently indicated for nutritional disorders, particularly anaemia and blood disorders, as well as conditions like emaciation, insomnia, forgetfulness, and its use as a galactagogue. It is used to address general weakness, the adverse effects of mental exertion, lipid disorders, and to improve organ function. It even finds application in conditions like muscular dystrophy, helping in recovery from debility and loss of vital power or strength due to disease.

To gain a deeper understanding of the therapeutic action of this medicine, conducting extensive research studies is essential. Such efforts will contribute to comprehending the medicinal action more profoundly, potentially providing a basis for expanding its applicability.

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### **Conflict of interest**

The authors declare that they have no conflicts of interest.