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Review Article

Gut, Cholesterol & Homoeopathy

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Abstract: When we discuss homoeopathy, invariably the Bowel Nosodes group drugs are an integral part of homoeopathic materia medica. All these are leading anti-inflammatory & immune-boosting dealing drugs of homoeopathic materia medica, the nosodes from the bowel are the drugs that the article discusses. Nosodes are those drugs in homoeopathy which are prepared from the disease related products or organisms. This means these are the gut bacteria from which medicines are prepared as per the homoeopathic pharmacopeia. The article looks into the role of one such bowel nosode from the Oscillibacter species. The article looks into the scientific aspects of these dealing drugs to deal with hypercholesterolemia. The future use of the drugs in the Non-Communicable Disease (NCD) like high cholesterol levels on a large scale will only benefit the masses. The drugs are cost effective, therapeutically active with no side effects & these properties only augur well for large scale application of homoeopathy on NCDs. The use of these drugs is authenticated by the scientific research of the gut bacteria on reducing cholesterol. For the benefit of the masses, the homoeopathic perspective, use & a treatment protocol is described in this article. The protocol is based on the bowel nosodes that can help in reducing cholesterol. The authority books of homoeopathic materia medica & the encyclopedia of homoeopathy are referred in the article.

Keywords: Hyper-Cholesterolemia, Bowel Nosodes, Homoeopathic Materia Medica, Miasm.

INTRODUCTION

The gut bacteria have become a hot topic as it is said to be the pivot of our health and well being. The gut impacts our key lifestyle markers like cholesterol, blood sugar, triglycerides, body fat & hemoglobin. Recent research elicits that specific bacteria in the gut can chew up cholesterol, lowering its levels in the blood & thereafter eliminating the risk of plaque formation in the heart arteries [1, 2].

The current article not only delves into the details of the relation between gut bacteria & cholesterol levels but also delves into the relation between gut bacteria & homoeopathy in sustaining the low cholesterol levels in the body [1,2].

At the distal part of the article, there is a treatment protocol based on the homoeopathic system of therapeutics. As the system of therapeutics has the properties of Essential Medicine (EM), masses can be covered easily with integration of homoeopathy into the domain of cholesterol interventions. The following figure gives a snap shot of the study of gut bacteria & cholesterol levels that was published in the journal 'Cell' in the year 2024 [1, 2].

The first part of the figure shows the microbiome & Cardio Vascular Diseases (CVD) sampling (n) of the Framingham Heart Study (FHS) & how the metabolomes & metagenomes of the gut of these participants were analyzed for microbial diversity that include the gut bacteria Oscillibacter. The second part is regarding the functional prediction. The third is regarding the validation of the association between gut bacteria through the process of involving Cell & Gene Therapy (CgT). CgT is a medical research using genes, tissues & cells to treat diseases. Another is the role of IsmA that is a protein or in fact a cholesterol dehydrogenase protein found in the human gut microbiome [1, 2].

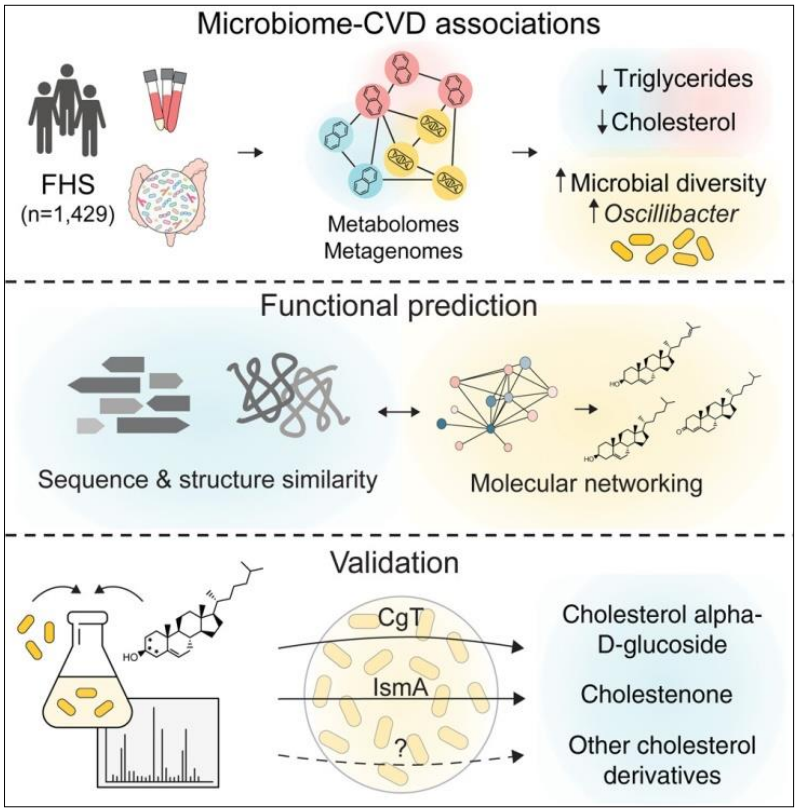

Figure 1: Gut bacteria & cholesterol study in a graphical snapshot [1, 2].

LITERATURE BROWSE

The figure above is from the study where the authors comprehensively profiled gut microbiome contributions to Cardio Vascular Diseases (CVD) & generated stool metagenomics & metabolomics from 1,429 Framingham Heart Study (FHS) participants [1, 2].

The study identified blood lipids & cardio vascular health measurements associated with microbione & metabolome composition. Integrated analytics revealed microbial path ways implicated in CVD including flavonoid, Ý butyrobetaine & cholesterol metabolism. Species from the Oscillibacter genus were associated with decreased fecal & plasma cholesterol levels [1, 2].

As shown in the figure, the study used functional prediction & in vitro characterization of multiple representative human gut Oscillibacter isolates, the authors uncovered conserved cholesterol metabolizing capabilities including glycosylation & dehydrogenation. The findings suggested that cholesterol metabolism is a broad property of phylogenetically diverse Oscillibacter species with potential benefits for lipid homeostasis & cardiovascular health [1, 2].

Among the four highlights of the study, the first one was 'multi-omic profiling in FHS reveals microbes & metabolites associated with CVD'. The second was that 'Oscillibacter species are associated with decreased blood & stool cholesterol'. The third referred to 'homology searches & molecular networking predict cholesterol enzymes & products'. The last one was that 'Oscillibacter species encode for conserved cholesterol metabolizing enzymes [1, 2].

The study was done over a decade long period. Those who had Oscillibacter bacteria in their gut had lower cholesterol levels than those with poor levels of Oscillibacter. Oscillibacter break down cholesterol so that it cannot be absorbed into the blood stream. The end product passes through the stool. There are similarities among earlier researches. Several strains of Lactobacillus bacteria which is the most common form of gut bacteria entrap cholesterol from their surroundings & incorporate it into their membranes. This is a different way of eliminating cholesterol unlike the previous way [1, 2].

Oscillibacter bacteria influence bile acids & these acids are essential for fat digestion & absorption. Once the bile acids finish this action, the acids return to the liver for recycling. Some amounts of bile acids remain in the gut & these acids act as fodder for the bacteria & thus they grow. During this process, the gut bacteria break down bile acids into secondary bile acids. These secondary bile acids regulate cholesterol metabolism. In addition, the bacteria breakdown dietary fibres through fermentation process & produce Short Chain Fatty Acids (SFA). These SFA inhibit cholesterol formation & keep the cholesterol levels low [1, 2].

Dimensions of Hypercholesterolemia

Hypercholesterolemia is a major pathogenic factor for Cardio Vascular Diseases (CVD), metabolic syndrome & Type 2 Diabetes Mellitus [3]. World Health Organization informs that the mortality rate is 31% for Cardio Vascular Diseases (CVDs) across the globe [4]. In hypercholesterolemic patients, reducing the level of Total Cholesterol (TC) & Low Density Lipoprotein-Cholesterol (LDL-C) can decrease the incidence of Cardio Vascular Diseases (CVD) [5-7]. Compared with healthy individuals, hypercholesterolemic patients are at three fold higher risk of getting heart diseases [8]. There is 1% increase in serum TC elevates the risk by 2-3% & 1% decrease in LDL-C level corresponds to a reduction of the relative risk for CVD events more than 1% [9]. Unhealthy eating habits which disrupt blood cholesterol metabolism is one of the main causes for CVDs [10].

Both pharmacological methods such as Statins & Fibrate [11]. & physiological methods such as dietary interventions & exercise are used to control the serum cholesterol levels of hypercholesterolemic patients [12, 13]. Due to the side effects of lipid reducing drugs, contra-indications for these medical treatments & personal preferences, most patients prefer other functional foods to combat hypercholesterolemia. Pro-biotic is a kind of live organisms which when administered in adequate amounts confer great benefit to human health [14].

A growing body of evidence indicates that pro-biotics exert cholesterol lowering effects through bile salt hydrolase. This is an enzyme of pro-biotics which hydrolyses bile salts into amino acids residues & free bile salts [15]. Along with this, cholesterol is also assimilated[16]. These beneficial effects have been demonstrated in both animal models & clinical trials [17-19]. Further, relationship between gut micro-biota, pro-biotics & disturbances in lipid metabolism has been well explained [20].

Concept of Probiotic

For a food to be considered pro-biotic, the micro organisms administered must be present at concentrations $>10^8$-10^9 CFU/ml. CFU stands for Colony Forming Units which means it is a way to measure the number of live bacteria in a pro-biotic supplement. It is a better indicator of the number of live microorganisms in a pro-biotic than the total weight of the microorganisms which can include both live & dead microorganisms. The pro-biotic should show tolerance to acidic environments & bile while conferring a health benefit [21-23].

A study was done in the year 2020 to assess the effects of pro-biotic consumption on the lipid profiles of hypercholesterolemic patients in Randomized Controlled Trials (RCT). The study performed systematic searches in the Cochrane library, web of science, medline & google scholar for relevant studies published up to March 2020. The study screened 2346 reports & 13 RCTs were selected out of this lot [24].

The pooled data revealed that pro-biotic supplementation significantly ($P<0.05$) decreased Total Cholesterol (TC) [n=20: Standardized Mean Difference (SMD)=-0.30:95%CI:-0.43, -0.16:$p<0.0001$] & Low Density Lipoproteins-

Cholesterol (LDL-C) levels (n=20:SMD=-0.32:95%CI:-0.46, -0.19:p<0.00001) in hypercholesterolemic patients. The study found that the administration of pro-biotics counteracted some aspects of dyslipidemia in hypercholesterolemic patients [24].

Future Steps

Probiotics having Oscillibacter strains or foods that promote their growth & activity should be a part of our diet. Probiotics exist in fermented foods like natural yogurt, cheese & kimchi. As mentioned above, animal studies have already hinted that some probiotic strains helps manage cholesterol levels [23].

A study done in 2020 mentioned above showed that how test subjects who had Lactobacillus bacteria enriched yogurt twice a day for 6 weeks had 5% reduction in overall cholesterol & 9% reduction in LDL [24].

Similarly a 2018 meta-analysis found that people who took probiotics reduced their total cholesterol level by 13%. The study used probiotics having Lactobacillus Acidophyllus & Bifidobacterium Lactis. These are available in powder or capsule form [25].

It is now seen that probiotics influence our cholesterol levels by reducing the absorption of cholesterol from our food. Thus the process limits the amount of cholesterol produced by the hepato-biliary system. More studies are the need of the hour. Treatments can include specific diets, probiotics & new drugs can be derived from the molecules produced by the bacteria [23-26].

In this scenario, it is prudent to look into the AYUSH system & from this list, the article picks up the homoeopathic system of therapeutics to deal with the issue of cholesterol. Homoeopathy has been using the gut bacteria as medicines since the late 19th century [27, 28].

Homoeopathic Angle

The discussion on probiotics, new drugs is an ongoing process that has been initiated recently. The discussion above revolved around Oscillibacter & other few gut bacteria. Here homoeopathy has a wide range of medicines that are prepared from the gut bacteria. It is here that the article delves into Homoeopathy as it is a personalized system of medicine. Further, it has a range of medicines called ‘Bowel Nosodes’ that are prepared from the bacteria of the gut. Here ‘Bowel’ means the gut and ‘Nosodes’ means medicines prepared from disease products or organisms. As the set of medicines are prepared from the bacteria of the gut, these are called ‘Bowel Nosodes’ [27, 28].

As Homoeopathy fits into the criteria of being therapeutically effective, no side effects & being cost effective as well, it meets the criteria of Essential Medicines as per the National List of Essential Medicines (NLEM) and National List of Essential AYUSH Medicines (NLEAM) of Government of India [29, 30].

Nosodes are the group of medicines that are prepared from the disease causing organisms or substances like toxins. The bowel nosodes are a series of remedies made from non-lactose forming bacteria of the human intestinal flora. These medicines were first developed by Dr. Edward Bach (1886-1936) and continued by John Paterson and later by his wife Elizabeth from 1920 to 1964. Dr. Paterson died in 1955 and his wife Elizabeth continued to work till 1964. The basic premise that Dr. Paterson theorized was that ‘the bacterium is a concomitant of the pathology and not the cause’ [27, 28].

Besides the paper presentation at Lyon in 1949, Dr. Paterson wrote a paper on the medicine ‘Sycotic Compound’ in 1933 and in 1950, he published a ‘Book on Summary of His Experiences’ [27, 28].

Life starts with interfacing a nosode through a bacteria for all of us as when we are born, the bowel is quickly populated by ‘Escherichia Coli’ and the first pro-biotic that the child receives naturally is the ‘Bifidobacterium’ from the breast milk. From this Bifidobacterium, homoeopathic medicines like ‘Lac Humanum’ and ‘Lac Maternum’ is prepared [31, 32.

Further, it is essential to mention the process of naming the bowel nosodes. Morgan (Bach) is so named because it was isolated by Dr. E. Bach from Enterobacteriaceae Morganella Morganii. Morgan Pure (Paterson) is so named because it was renamed ‘Pure’ by Paterson to differentiate from Gartner. It was developed as a sub group of Bach’s original Morgan Compound. Proteus (Bach) is named after the shape shifting of sea god of Greek mythology whose stench was said to be rank. Shape shifting is related to ‘Hysteria’. ‘Sycotic Compound’ is so named because Dr. Paterson used this drug to treat a case of Gonorrhoea of US Ground Infantry’s (GI) stationed in Britain during World War II (WW). As per the concept of Homoeopathy, since ‘Sycotic’ miasm infests in the Urinary Tract Infections (UTI) & in 1943 during WW II, Gonorrhoea bacteria’s infection was known as ‘Specific Urethritis’, Dr. Paterson named this nosodes as ‘Sycotic Compound’. The isolated bacterium was morphologically similar to the Gonococcus bacteria also [27, 28].

In this paragraph, the broad therapeutic uses of the bowel nosodes are mentioned as per the Homoeopathic system of medicine. Morgan (Bach) is associated with the Psoric miasm that causes only disturbances in the physiology & do not cause pathological disturbances. 'Mogan Pure' is associated with 'Congestion' & Morgan Gartner is associated with 'Irritability'.'Proteus Bach' is associated with 'Brain Storm' & is commonly known as the 'Angry Adrenalin'. Bacillus number 7 (seven) is associated with 'Fatigue'. 'Gartner Compound (Bach)' is associated with 'Nutrition'. 'Dysentery Compund' is associated with 'Apprehension' & is commonly known as the 'Heart Nosode'. 'Sycotic Compound' is associated with 'Irritability' [27, 28].

Details of Bowel Nosodes

As mentioned above, Dr. Paterson presented the detailed list of the following non lactose fermenting organisms that are prescribed as homoeopathic medicine only in ultra dilutions or potencies. The following table gives the details [27,28].

Table 1: Detailed list of the Bowel Nosodes [27-40]

Serial Number	Name of the Non-Lactose Fermenting Organism	Name of the Homoeopathic Medicine Prepared from the Organism	Biochemistry of the Homoeopathic Medicine	Name of the constitutional Homoeopathic Medicine that is in Relation with the Bowel Nosode
1.	Proteus Morganii and Enterobacteriaceae Morganella Morganni	Morgan (Bach) & Morgan Pure (Paterson) from P. Morganii & Morgan Gartner (Paterson) from Morganella Morgagnii	Sulphur and Carbon are the two outstanding elements	Sulphur
2.	Proteus Vulgaris and Proteus Mirabilis	Proteus (Bach)	Chlorine is the outstanding element	Natrium Mur
3.	Bacillus Asiaticus, Bacillus Cloacae and Bacillus Freundii	Bacillus Number 7 – it is named as such since it was the 7th non lactose fermenting type of bacillus as observed in the laboratory	Outstanding elements are Bromine and Iodine in combination with Potassium	Iodium, Kalium Carb
4.	Salmonella Enteritidis	Bacillus Gartner (Bach)	Outstanding elements are Silicea, Phosphorus and Fluorine	Phosphorus, Silicea
5.	Shigella Dysenteriae	Dysentery Compound (Bach)	NA	Arsenic Album
6.	B.Coli- intermediary form	Mutabile (Bach)	NA	Pulsatilla
7.	Streptococcus Faecalis	Sycotic Compound (Paterson)	NA	Thuja
8.	Enterococcus Faecalis	Faecalis (Bach)	NA	Sepia
9.	Bacillus Asiaticus, Bacillus Cloacae and Bacillus Freundii	Bacillus Number 10 (Paterson) – it is named as such since it was the 10th non lactose fermenting type of bacillus as observed in the laboratory	NA	Calc Carb- as it is prescribed for patients who can not digest eggs, fat, Lipoma, warts on hands & Leucorrhoea that smells like fish. As bacillus Number 7 is related to thyroid gland, fat metabolism comes in the domain of the nosode.
10.	Pyogenic Bacteria or Bacteria causing Septic State	CocalCo (Paterson)	NA	Pyrogen- Since this is prepared from infected & putrid meat
11.	Escherichia Coli/Bacillus Coli	Colibacillinum	NA	Medorrhinum- since this is a antisycotic that prevents Urinary Tract Infections (UTI) & E.Coli is a leading cause of UTI

Homoeopathy is popular in India & the system can help in achieving the concept of Universal Health Coverage (UHC) through its active integration. There is also a policy on the integration of AYUSH & the application of the concepts of these policies will go a long way to deal with the cholesterol issues [36-39].

CONCLUSION

With new high cholesterol cases being an obstacle & no effective or cost effective cure, it is time to look into the homoeopathy system of Ministry of AYUSH that addresses the reached & unreached areas of the current intervention. It can address all economic strata of the society. A long term cost effective, therapeutically effective with no side effects approach can be in place on integration of homoeopathy into the domain of high cholesterol related interventions.

The integration of homoeopathy into the high cholesterol related interventions will not only help India but also it will be a successful pilot to deal with high cholesterol levels at the global level through adoption of the pilot especially in the high cholesterol endemic countries. India can set an example in this regard. The intervention related to homoeopathy of AYUSH can also be initiated with the leading stake holders or development partners in India who work on Non Communicable Diseases (NCD).

As homoeopathy has become a part of the culture in India, the intervention will help to deal with the related life style issues of NCDs like high cholesterol related issues. Active surveillance could be the best effort for our nation apart from international cooperation & to develop & use indigenous capacity for low cost & no side effects medicine manufacturing before other nations. One example is the use of homoeopathic therapeutics in this process. All of us know that all these processes take time & hence it is wise to use our strength in the form of integration of Homoeopathy into the cholesterol related interventions. These interventions can be rolled out both at centre & state level.

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