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Nosodes: Evolution and preparation

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Abstract
The word Nosode is derived from Greek word **"**Nosos**"** meaning 'disease' and **'**Cidos' meaning **'**appearance**'.** It may also be compared with Latin word **'**NOXA**'** which means 'Noxious or Damage' [1]. As per HPI, vol. 4, Nosodes are defined as "Homoeopathic preparation from pure microbial culture obtained from diseased tissue and clinical materials (secretions, discharges etc.)" [3]. In homoeopathic practice, nosodes have an important and indispensanble part. They are frequently indicated as common, intercurrent, anti-miasmatic, or acute remedies, etc., depending on the physician's perception. More than 45 major nosodes have been in use since 1830 requiring revision in process of preparation**.** This article gives a clear concept on nosodes and their preparations.

Keywords: Nosodes, evolution, history, preparation

1. Introduction
Nosode's mechanism possible involve direct effect on the host cells instead of under itiological infectious agent. The homoeopathic stimulus is also called the primary effect of the homoeopathic remedy that induces a secondary response increasing the body's capability to fight against different diseases. Different clinical works clearly shows that nosodes are able to induce changes in immunological balance according to homoeopathic potency used.It was Hering's idea to use these miasmic agents as a potentised remedy. A definite set of rules have been given for the preparation of these nosodes here.

Evolution of Nosodes [4]
The earliest experiment on nosodes were carried out by Constatine Hering while he was in Surinam, Guiana, South America between 1827 and 1833. In 1832 Hering said – "During the experiments on the serpent poison, I have given out the idea that the hydrophobic virus should be a powerful pathological agent. I presented the same hypotheses regarding the virus of variola [small pox]. Hering originated the method of using a miasmic agent as a basis for a remedy and it was he who coined the term "Nosode".
Isopathy was having the seeds of nosodes. Dr. Collet had divided isopathic method of treatment into three categories:-

A. The organic Isopathy, which in later days founded the concept of Organotherapy
B. The Serotherapy
C. The Pure Isopathy

This Pure Isopathy, later on, give another term the concept of nosodes. Once an isopathic substance is dynamised, it becomes a pure homoeopathic potency. Therefore, it must be applied by the cardinal principles of homoeopathy if it is going to be used correctly. Hering clearly stated that nosode, are useful as intercurrent remedies. Their remedial action must be complemented by constitutional remedies within complete constitutional management.

History [4-6, 8-10]
In 18th century, when Hering began to study the works of Hahnemann and in 1831 when his work on Lachesis was published and his first idea on the uses of Homoeopathic remedies prepared from excretions or from the pathological secretions which he named nosodes were formulated.
1833, John Joseph Welhelm Lux published his work Isopathia Der Contageonen or all the disease carry in them the means of their cure& created the stock Anthracinum and then Malleinum. He prepared the most varied nosodes such as Carbyzine, Anthraxcinum, Leucorrhoea, Scabies, Equorium, Hominum, Variola hominum, Psorican.

At the same, time Gross and Attomyer popularised the knowledge of Psorinum of Hering. In 1833 Lyssin was potentized and proved by HERING.
In 1836 Anthracinum was introduced by G.A. WEBER in cattle plague.
Later in 1862, Malaria officinalis was brought out by G. W. BOWEN of Ft. Wayne. It was prepared from the stagnant goals in the malarial section.
In 1870, SWAN published two cases of tuberculosis cured by Tuberculinum (ex-phthisine of Hering and Lux) prepared from the suppurated tubercular cavity.
In 1871, Variolinum came into use.
In 1873, Vaccininum came into use.
In 1875, Medorrhinum was introduced by SWAN.
In 1879, Syphilinum was used and its proving was published in the following year.
Burnett of London, disciple of SWAN utilised Bacillinum (dilution of the sputum of T.B. patient) that happened five years before Koch's discovery.
Drysdale preconises Pyrogenium (product of decomposed meat) in Typhus and in septic conditions. Swan recommends Diphtherinum.
Dr. Kighel of Belgium 1st established a clinical pathogenesis of Tuberculinum. Later on J.H. Clarke (Homoeopathic world 1891,v.26,p.304) published an analytical pathogenesis called from all cases observed up to that time by the Allopathic doctors relating to the action of Tuberculine on the tubercular patients and also on the non – tubercular patients.
In 1906, Clarke in England brought out Purtussin; Bordet discovered in the same year Pertussis bacillus.
In 1910 - H.C. Allen, published the Materia Medica of The Nosodes.
December 29, 1948, in France, issue of the Journal Officiel, a deceree was published called Codification of homoeopathic herbal preparations - "Nosodes are never sold to the public in the natural state, but only from the 3C dilution or 6X dilution upwards." They need to pass sterility test.
Frenchman O.A. Julian, first published 'Materia Medica der Nosoden' in German in 1960.
Later to come out in two French versions, one in 1962 entitled 'Biotherapiques et Nosodes' and the other in 1977 entitled 'Traite de Micro-Immutherapie Dynamisee'.
After 1990, Two nosodes, one from the whole mosquito and another from the blood of an affected patient of Chikunguniya, were prepared.
In 2007, the Finlay Institute in Cuba prepared a Leptospira nosode 200 CH using four circulating strains and used as homoeopathic prophylactic.

Classification of Nosodes [1, 2]

The NOSODES are classified in the following types:

1. Basic Nosodes: Psorinum, Tuberculinum, Bacillinum, Carsinosinum.
2. Exanthem (A wide spread rash): Parotidinum, Variolinum.
3. Isopathic Nosode: Streptoccoccinum, Staphylococcinum, Pneumococcinum.
4. Intestinal Nosodes: Medicine prepared from cultures of non lactose fermenting bacterial flora of the intestinal tract are called intestinal Nosode. Dr. Edward Bach, a bacteriologist in London discovered it. Proteus, Dysentry co., Morgan, Gartener bacillus etc.
5. **Autogenous Nosodes:** (Prepared from discharges or secretions from the pathological tissues or organs of the patients himself for treatment of that very diseased state)
6. **Plant Nosodes**: (Nosodes prepared from plants.) Ustilago maydis, Secale cornutum.

Preparation of Nosodes [3]

Depending upon the nature of material used, these may be divided into following 4 groups –
N I: Preparations made from lysate of microorganism capable of producing bacterial endo-toxins e. g. Typhoidinum, Paratyphoidinum, E. coli-bacillinum and Staphylococcinum etc.
N II: Products made from microorganism capable of producing bacterial exo-toxins e. g. Diphtherinum
N III: Preparations made form purified toxins.
N VI: Preparations made from microorganism/viruses /clinical materials from human convalescents or diseased subjects e.g. Variolinum, Influenzinum, Psorinum and Syphilinum.

General method for collection and preparation of strain

Microbes available as pure organism are obtained from suitable clinical material from subjects suffering from the disease are isolated, cultured and identified.
Their properties are studies for complete identification as per individual monograph and they are lyophilised to ensure preservation and stability of characteristics.
The first step involved should be preparation of culture medium most suitable for growth of the organism from which homoeopathic nosodes are to be prepared.
The solid medium generally recommended is nutrient agar which generally is satisfactory in most cases. In other instances, special solid culture medium containing proteins such as blood agar, serum agar have also been recommended. Freshly isolated organisms invariably of S-type are recommended for use.
Stock nosodes should be made from recently isolated organisms only. Where this is impracticable the culture should be kept below 500 ℃ so that they retain their full antigenic value. Stock cultured are most often maintained in lyophilized state.
Unless otherwise specified in the individual monograph the culture is allowed to incubate for 24 hours at 370 C. At the end of incubation, the microorganisms are harvested under aseptic conditions by pouring sterile isotonic salt solution on the solid media and then generally shaking or scraping until all the microorganisms have been suspended.
Subsequently the suspension is centrifuges at 5,000 R.P.M. for 30 minutes, (3980-4070 G, ICE. International centrifuge) the supernatant is discarded and bacterial pellets are resuspended in 0.9 percent sodium chloride solution, shaken well and centrifuged again.
The suspension of bacteria is examined again for purity. It is essential that purity of the strain is maintained during incubation and handling.
Purity checked at different stages. In case of contamination the lot should be rejected and a fresh strain is used.
After 24 hours of growth in incubation a colony is re - examined for checking the characteristics and purity of the strain.
The culture is then taken up in the 0.9% aqueous sodium chloride solution.

Strength
The growth is suspended again in isotonic solution, shaken to break up clumps and to make a uniform suspension. Number of bacteria in each ml of suspension is estimated and is adjusted 20 billions viable cells per millilitre.
It forms the original stock in case of drugs of groups N-I and N-II. For group N-III and N-IV the strength of original stock should be one part of the pure material in ten parts of the suspending/diluting material which may be lactose or glycerine as suggested in individual monographs.

Group, N-I:
Bacteriolysis of the suspension containing 20 billion viable cells/ml in distilled water is carried out be a sonicator till most of the bacterial cells are ruptured. The material is centrifuges at 10,000 R.P.M. for 30 minutes (3980-4070 G, ICE, International centrifuge). The supernatant is filtered through sietz filter and the cell free extract containing the endotoxin, is treated with equal volume of strong alcohol. This strength is sealed in separate ampoules and is labelled as primary stock nosode. This serves as IX for preparation of homoeopathic dilutions. This should be preserved at 4-60 °C.

Group, N-II
The toxigenicity of the strain is established before use. The suspension having 20 billion viable cells/ml is mixed with equal volume of strong alcohol and hermetically sealed under aseptic conditions. It is labelled as primary stock nosodes as IX. This should be preserved between 4-100. Further attenuations are made in dispensing alcohol in ratio 1:9. This must comply with test for sterility before being issued.

Group, N-III
Preparations are made by trituration is lactose with drug strength 1/10. Attenuation up to 6x are kept in hermetically sealed ampoules and stored in conditions prescribed under individual monograph.

Group, N-IV
Preparations are made by Hahnemannian method of trituration class IX, HPI Volume I 262, is followed. Attentuations up to 6X should be stored between 4-60C.

Notes
- Centrifuge speed in all the above operations should not be below 10000 R.P.M. The operation should be for 30 minutes or till complete separation in a refrigerated centrifuge.
- No chemicals, antiseptic or bacteriostatics should be mixed at any stage of operation with the material.
- Preservations of all the products and potencies below 6 x should be done in a refrigerator at+40 to 60.
- Live organisms should be handled with care and following aseptic conditions.
- Bacterial count means total number of organisms/ml (live or dead).
- As far as possible the substance used in original proving should be taken as the starting raw material.
- To check the hygienic conditions of the laboratory plate count should be done from time to time.
- All potencies below 3x of group N-I, N-II and N-III should bear date of manufacture and a life period of six months from the date of manufacture.

Three Nosodes (HIV, Hepatitis C, and Mycobacterium tuberculosis*)* are prepared by new method.

Steps for preparation [6]
1. Identification and procurement of source material,
2. Nature of material,
3. Removal of common co-infection / contamination,
4. Removal / Separation of other components,
5. Characterization of source material,
6. Safety,
7. Mother preparation,
8. Quantification,
9. Potentization: Machine and method,
10. Safety check for human use,
11. Lyophilization

Conclusion
In the study of any branch of science, an acquaintance with the historical development of knowledge is an important element in clear understanding of the present concepts and in framing a path for further research. For the clear concept on nosodes, The study must highlighted the evolution of nosodes along with its preparation. This work is directed to compile the works of our masters on nosodes that would help in understanding and justifying the concept in much broder light and would further help the us to prescribe nosodes with confidence.

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