

EFFECTS OF STRESS ON AUTOIMMUNE HEPATITIS (AIH) - A REPORT

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It is an era of rising economics and fast paced R&D (Research & Medical Development). While there are new diseases being identified everyday. There is continuous human efforts in medical sciences to counter these. Diseases which have been a mystery are no more, alien to the medicine world. The aim of this write up is to put light to a far lesser known term, Auto Immune Hepatitis (AIH). AIH has been reported to show considerable geographical variation in frequency and clinical manifestation and the present study was undertaken to determine the clinical biochemical & histological profile of AIH in eastern Uttar Pradesh belt, India.

Key words : Stress, Autoimmune Hepatitis (AIH), eastern U.P.

INTRODUCTION

Immune System working : An immune system is a system of biological structures and processes within an organism that protects against disease by identifying and killing pathogens and tumor cells. It detects a wide variety of agents, from viruses to parasitic worms, and needs to distinguish them from the organism's own healthy cells and tissues in order to function properly. Detection is complicated as pathogens can evolve rapidly; producing adaptations that avoid the immune system and allow the pathogens to successfully infect their hosts.

Immune Disorder : There are two categories under this disorder i) Immunodeficiency and, ii) Autoimmune diseases. Immunodeficiency diseases occur when the immune system is less active than normal, resulting in recurring and life-threatening infections. Immunodeficiency can either be the result of a genetic disease, such as severe combined immunodeficiency, or be produced by pharmaceuticals or an infection, such as the acquired immune deficiency syndrome (AIDS) that is caused by the retrovirus HIV.

In contrast, autoimmune diseases result from a hyperactive immune system attacking normal tissues as if they were foreign organisms. Common autoimmune diseases include Hashimoto's thyroiditis, rheumatoid arthritis, diabetes mellitus type 1, and lupus erythematosus.

AutoImmune Hepatitis Autoimmune diseases arise from an overactive immune response of the body against substances and tissues normally present in the body. In other words, the body actually attacks its own cells. The immune system mistakes some part of the body as a pathogen and attacks it. This may be restricted to certain organs or involve a particular tissue in different places. There are more than a dozen disorders under this category and Auto Immune Hepatitis is one of them

Immunology covers the study of all aspects of the immune system, having significant relevance to health and diseases. Further investigation in this field is expected to play a

serious role in promotion of health and treatment of diseases.

How does Immune System works : The typical vertebrate immune system consists of many types of proteins, cells, organs, and tissues that interact in an elaborate and dynamic network. As part of this more complex immune response, the human being has an innate immunity which he gathers from mother to offspring through placenta, while there is an acquired immune system that adapts over time to recognize specific pathogens more efficiently. This adaptation process is referred to as "adaptive immunity" or "acquired immunity" and creates immunological memory.

Immunological memory, created from a primary response to a specific pathogen, provides an enhanced response to secondary encounters with that same, specific pathogen. This process of acquired immunity is the basis of vaccination.

MATERIALS AND METHODS

Experiment and Objective : To evaluate the correlation between work load (stress) and AIH.

Method : 40 people were chosen randomly across Raebareli region. For the diagnosis and below are the diagnosis results

Table I : Biochemistry of Liver of 40 people under the experiment.

Liver Biochemistry	Value	No. of Patients
Elveated Bilirubin (N 0.2-1.0 mg/dL)	<10	38
	>10	2
Alkaine phosphate elevated	>100	2
	<100	38
GGTP	>32	2
	<32	38
Globulins	>3.5	2
	<3.5	38

Table II : Clinical presentation of 40 people considered under the experiment.

Clinical presentation	Positive	Negative
Age at diagnosis	35	45
Female %	2.5%	97.5%
Liver Disorder	2	38
Insulin Dependent	15	25
Profile of patients tested positive for AIH	Positive	Negative
Male	1	34
Female	1	4
Age	35	45
On drugs	5%	20%
High Stress	5%	45%

Table III : Liver function Test (LFT). Enzyme immunoassay and indirect immuno-Flourescence of AIH patients.

Patient	Age	Life Style	Disturbed Anti bodies	Abnormal
1st	34	Working, having too much work load tension & exertion	ENA - Positive ANA - Positive	1- SGPT 2- SGOT 3- Alkaline Phosphate 4- Fever
2nd	35	Working Excessive work load with high tension in life and exertion	ANA - Positive ASMA - Positive	1- Bilirubin 2- Alkaline Phosphate, 3- Fever 4.SGPT 5.SGOT

ENA : Enzyme Immunoassey; Indirect immuoflourescence for ANA : Antinuclear antibody ; ASMA - Anti smooth muscle antibody.

* : Auto immune marker reports from Sanjay Gandhi Post Gr,aduate Institute of Medical Sciences, Lucknow (India).

RESULTS AND DISCUSSION

Out of 40 people under investigation, 45% of the population was exposed to a hectic work life style. It's noteworthy that 37.5% of the people were insulin dependent, 10% arthritis affected and another 5% AIH affected. .Which means >most the population is exposed to some hyperactivity of immune system.

One reason which can be clearly attributed from above is Stress. Stress leads to changes in hormones and enzymes. Excess secretion of these may lead to miscommunication between many types of proteins, cells, organs, and tissues, this disrupts the normal working and the coordination, which leads to the acquired memory loss and hence creates Immunological imbalance, leading the immune system to kill body's own cells.

From the above analysis it can be concluded that work load, exertion, and stress may be the trigger point of autoimmune hepatitis.

The life style of man is like endless rat race these days. This was earlier true for metro cities only, but smaller town haven't been untouched with this mass industrialization as well. Poor nutrition, lack of sleep, stress, fatigue can further add to imbalance of immune function leading to hypo immunity or hyper immunity.

Here, the study was undertaken upon the hyper immunity and its diagnosis through various immunological techniques. Subjects attributed here were from Raebareli with autoimmune hepatitis. 02 out of 40 working persons with autoimmune hepatitis were studied upon AI marker CANA, SMA, Anti-LKM, AMA).

While the study clearly concludes Stress as the probable cause for such Hyper activity, contribution of geographic factors may also be a leading factor and further intra-

geographical studies can be conducted as an extension to this study. There are immune suppressant available in markets which can refrain the immune system from a hyper activity , thus artificially protecting the body organs but it also simultaneously put the patient to risk of viral, fungal and other bacterial infections. Ayurvedic Medicine Guduchi (*Tinospora cordifolia*) supports normal function of the immune system and can be supplemented at earlier stages of disease detection. A lesser explored alternative is also available in the form of yoga and meditation. which doesn't have side effect and has proved to give miraculous results. Yoga, Ayurveda and controlled nutrition provides a ray of hope and might together work out a feasible complementary solution to the current known treatments.

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