

Impact
Factor
2.147

ISSN 2349-638x

Refereed And Indexed Journal



**AAYUSHI
INTERNATIONAL
INTERDISCIPLINARY
RESEARCH JOURNAL
(AIIRJ)**

Monthly Publish Journal

VOL-III

ISSUE-VIII

Aug.

2016

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CHIEF EDITOR – PRAMOD PRAKASHRAO TANDALE

“A conceptual study of autoimmunity and rasa dhatvagnimandya in light of amapachan chikitsa”

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Abstract-

Autoimmunity, its resultant diseases and their treatment is one of the greatest challenges for medical science. Genetic and environmental factors are considered as striking events for breakdown of self tolerance. It results in autoantibody formation, though evidence of this is lacking for all autoimmune diseases.

In modern science only palliative treatment is used to suppress immune system eg. - Glucocorticoids, NSAIDs, Antibodies against B or T cells etc. All these measures needs long term medication and have multiple side effects. So there is need to find better, safer, curative or long lasting measures from Ayurveda for such diseases. In Ayurveda we do not get direct reference for immunoglobulins but dharan and prenan karma of rasa dhatu can be correlated with immunoglobulins when self-tolerance is maintained. Agnimandya from various reasons leads to ama formation and both eventually contributes for diseased condition.

So here is an attempt to correlate rasa dhatvagnimandya with autoantibodies to ascertain amapachan and agnideepanchikitsa for the management of autoimmune diseases.

Key words- Autoimmunity, Immunoglobulin, Rasadhatvagnimandya, Amapachanachikitsa.

Introduction-

Immunoglobulin secreted by B cells, T cells, monocytes, PMNs contributes immune system¹. These cells prevent body against foreign antigen and their toxins by antibody formation and release of cytokine which responds in the form of inflammation².

In normal state, autoantibody formation is prevented by self tolerance by HLA molecules(MHC).In autoimmune diseases there is breakdown in self tolerance to form autoantibodies. Autoimmune diseases can be organ specific like Hashimoto's thyroiditis, Grave's disease, Myasthenia gravis or organ non-specific like RA, SLE or some may overlap to both types. All autoimmune disease manifests as chronic inflammation of the part involved and some systemic sign and symptoms like fever, anorexia etc³.

The only available treatment are use of Glucocorticoids, NSAIDs, CTLA-4, intravenous immunoglobulin, and stem cell replacement. All these measures only reduces immune response .They need long term medication, have multiple side effects and are uneconomical⁴.So it is important to find better, safer and long lasting therapy from Ayurveda to deal with autoimmune diseases.

According to ayurveda,Jatharagni maintains health by regulating normal functions of dhatu, dosha, mala and other agnis. Jatharagnimandya due to various reasons leads to ama formation. If not treated in early stage it further unites with dosha or dhatu to manifest with several diseases⁵.

Rasa dhatu is prime and chief of all dhatus which helps in dharan and prenan karma⁶, which can be correlated with nutritive, protective functions and cellular stability provided by internal

environment when it is within limits of physiological range .So that, we can consider sama rasa dhatu as dysregulation in the internal environment.

Agni and Ama-

Longevity of life,bala,swasthya, all other agnis, dhatu,dosha,mala and their proper functioning are all dependent on Jatharagni.

Jatharagnimandya by various reasons leads to ama formation which has ability to vitiate all doshas in body⁷. This ama can produce many diseases when it unites with doshas and dhatus like ama with pitta produces daha,ama with kapha produces prameha etc..

Ama is divided into three types on basis of its production as – jatharagnimandyajanya, malasanchayajanya and due to prathama dosha dushti i.e. rasa dhatvagnimandyajanya⁸.

Rasa dhatu is formed when rasa dhatvagni acts on ahara rasa after action of Jatharagni and Bhutagni. This rasa dhatu is continuously circulated in the whole body⁹.Its properties are similar to that of kapha dosha¹⁰ which is produced as waste material during formation of rasa¹¹.Both are commonly snigdha (oily), sheet (cold), guru (heavy), manda (slow /mild), shlakshna (smooth) in nature.Rasa being the first dhatu formed from ahara rasa is considered the chief of all seven dhatus .It helps in normal production and functioning of all further dhatus¹². Its main functions are dharan and tarpan or prenan .Dharan karma refers to holding or supporting and tarpan refers to providing freshness or vitality. Agnimandya due to various reasons will produce dhatvagnimandya if one continues to follow hetusevan to form sama rasa dhatu. This not only hampers its normal functions but may produce disease wherever there is strotovaigunya.eg. - Amavata, it is initiated by consumption of viruddhaahara or consumption of oily or fatty food followed by immediate exercise in state of pre-existing agnimandya. This event further causes dysregulation of rasa dhatvagni to produce sama rasa dhatu.

Vitiated vatadosha circulates this sama rasa all over body through dhamnis and produces gatrastabdhatu when it takes shelter in shleshmasthanas.Though ama and vata are chief pathological factors, kapha and pitta are also invariably involved in its samprapti which may produce signs and symptoms and further complications as bahumutrata ,trishna etc. accordingly¹³.

On this basis, we can say that when there is strotovaigunya at other sites (kaphasthana or pitta or vatasthana, sama rasa may manifest with other symptoms accordingly.

Foreg.- Sama rasa in urahsthan – Hashimoto's thyroiditis, Grave's disease

Sama rasa in shira- Encephalomyelitis

Sama rasa in vatasthana(Pakwashaya)-Crohn's disease,Ulcerative colitis. (Skin)-SLE, Scleroderma

Sama rasa in pittasthana(Urdhvaamashay)- Atrophic gastritis

When sama rasa interferes with other dhatus it may produce diseases like-

Sama rasa affecting rakta- autoimmune haemolytic anaemia, autoimmune thrombocytopenia.

Sama rasa affecting mamsadhatu- Myasthenia gravis

Sama rasa affecting medadhatu- Addison's disease.

Sama rasa affecting shukradhatu- Orchitis.

Primary treatment for amavata is amapachana by means of langhan, agnideepan and use of katu-tikta dravyas¹⁴.All these treatment strategies help to remove formed ama and induce jatharagni which eventually corrects dhatvagni and regulate their respective functions to produce proper ahara rasa and rasa dhatu.

Other treatments like basti,upnaha,rukshaswedana helps to reduce vitiated vata dosha¹⁴.

Internal environment(Plasma) and immunoglobulins-

It refers to extracellular fluid in the body where cell remain suspended. It includes plasma and interstitial fluid¹⁵. These fluids are similar in composition. Plasma is rich in proteins like albumin, immunoglobulins and also contains amino acids, carbohydrates, fats etc¹⁶. So it helps to provide nutritional demands, protection from antigenic stimulus and thus maintains structural and functional stability of cells¹⁷. Immunoglobulins remain circulating in plasma¹⁷. They are activated normally against foreign antigens only. Formation of antibodies against own tissues is prevented by the mechanism of self tolerance by MHC-major hystocompatibility molecules (HLA-human leukocyte antigen, in human) which decides tissue compatibility with blood and helps to keep body tissues in their normal state.

If there is breakdown of self tolerance by genetic, environmental or immunological factors, it results in autoantibody formation to start tissue destruction. So, maintenance of normal functions of immunoglobulins is important to give a normal healthy internal environment to maintain cells structurally and functionally sound.Eg. In rheumatoid arthritis,IgM forms antibodies against IgG to form immune-complex. This immune-complex with cytokinesattacks joints to manifest with joint swelling, tenderness, stiffness¹⁹, and some systemic sign-symptoms like anorexia, fever. Treatment used like NSAID's, Glucocorticoids, DMARD's, TNF α inhibitors etc. produces side effects like Gastritis, peptic ulcer disease, osteoporosis, increased risk of infections etc.

Discussion-

All immunoglobulin are secreted in plasma. It helps to maintain health and other tissues in their normal state by producing antibodies only against foreign antigens and not self-antigens and thus providing healthy intracellular environment when self-tolerance is maintained.

This function of immunoglobulin can be considered to be similar to dharan and prenan karma of rasa dhatu at cellular level by providing nourishment, and structural-functional stability to cells. It further helps to maintain proper formation and function of all other cells or dhatus.

So immunoglobulin can be considered as part of rasa dhatu and autoantibodies as rasa dhatvagnimandyajanyaama or sama rasa.

On basis of this assumption we can use amapachan and agnideepan chi. described for ama or amavata for treating rheumatoid as well as other autoimmune diseases. Amapachan and agnideepan will not only remove formed ama but will induce jathargni and dhatvagni to produce prakrit rasa dhatu i.e. can be considered to regulate normal function of immunoglobulin and maintenance of self tolerance.

Conclusion

- Functions of immunoglobulin when self tolerance is maintained can be considered to be similar with that of normal rasa dhatu.
- Breakdown of self tolerance and autoantibody formation can be considered as rasa dhatvagnimandya and sama rasa.
- Amapachan and agnideepanchikitsa can be used for autoimmune diseases.

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