

The essential knowledge to remain healthy

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Since birth we come in contact with many living and nonliving agents, size ranges from micro to macro; some of those are unfriendly. Fortunately we have our own defence mechanism, the immune system, to combat and/or eradicate most. The immune system is a highly complex system capable of responding to any and all of these challenges with constant self-monitoring and self-regulation to ensure not to make the responses against any of the self-biomolecules.

When the immune mechanisms get activated without any foreign invasion it may result in autoimmune diseases. Immune system can recognise and selectively eliminate the unfriendly foreign invaders, keep the memory of such (earlier) encounters to prevent further attack. Loss or inactivation of our immune system may allow the pathogen to gain a foothold and overpower the individual. Hyperactivation can also lead to dire consequence.

Appropriate and complete comprehension of the knowledge of immunology can help someone to understand the natural course of defence. It can guide:

- To take necessary diets, exercise etc. to increase efficiency of body defence mechanisms against disease
- To avoid the exhaustion or inactivation of immune system due to unnecessary and/or incomplete dose of medication
- To take precaution to avoid pathogen, allergen, carcinogen thus escape harmful or lethal consequences
- To understand the mechanism and power of healing
- Prevention, control and cure

Example of misunderstanding, wrong wording and incomplete message!

Billboards hanging on the street corners at many points of cities and villages, describing dangers of different diseases, are supposed to let our awareness be enhanced. Instead, sometimes they may create wrong perception on the precaution, prevention and control of the disease.

For example, publicity is at full pace to create popularity of condom use to prevent HIV/AIDS. People are sometimes embarrassed to look at the language and a *prach* of the billboards. Although proper emphasis has been given on the sexual transmission of HIV/AIDS, the spread of this disease by sharing the needles of HIV contaminated blood during injectable drug abusing is being overlooked which has also been recognised as one of the most important routes of HIV transmission. It is to be noted here that contaminated other body fluids e.g. saliva has also been found to be responsible for transmitting infection like hepatitis B virus (HBV).

A report quoted by Suneeta Mukherjee, UNFPA representative, Bangladesh published in The Daily Star, December 1, 2003 may suffice the risk of injectable drug users (IDU) for spreading HIV/AIDS in Bangladesh: "The fourth surveillance by the UNAIDS/WHO finds that HIV has reached 4 percent among the IDUs.

About 33 percent of the IDUs in Bangladesh visit female sex workers; 70 percent of rickshaw-pullers visit female sex workers and have wives at home. The spread of HIV/AIDS from IDUs to sex workers and rickshaw-pullers would be very fast unless it is prevented. The IDUs have highest uses of the shared needles (74 percent) which is one of the important modes of transmission of AIDS. Equal efforts therefore, should be given to prevent the spread of AIDS both by the drug abusing and unprotected commercial sex".

Dr Md Abdus Salim (Program Manager, AIDS/STD Program, Directorate General of Health Services) also has quoted with certain caveats: "IDUs in Bangladesh is the high-risk sub-population getting HIV/AIDS and other blood born diseases like syphilis and HBV. HIV epidemic among the drug users has increased more than 100 percent compared to last year. HIV-infection among the IDUs is now

close to the critical 5 percent making a concentrated epidemic".

Invasion of drug resistance results of ignorance and impatience

"There is increasing incidence of bacteria *Escherichia coli* strains resistant to third generation cephalosporins, a consistent rise in fluoroquinolone resistance, and resistance rates of more than 50 percent to ampicillin" according to European Antimicrobial Resistance Surveillance System, Tony Sheldon has quoted while describing the soaring up of antibiotic resistance in Europe. Drug resistant malaria, gonorhoea and other infectious diseases in Bangladesh have been considered as public health threat.

We are among the top ten antibiotic user nations of the world. Perhaps we would also be one of the top self-prescribing medicine user nations. This is not only because we hardly understand how easily we become victims of drug-resistance but also we do not have faith on the power of our immune system.

Needless to say, monitoring and controlling of selling medicines without prescription, where necessary, have to be brought under complete execution without any delay. In many cases being impatient, we try to have immediate medication to subside symptoms like high temperature, headache, minor food poisoning, rare sleeplessness etc. Again, ignoring the doctor's advice we also stop taking medicines as soon as the symptoms are gone without completing the dose. While a little knowledge on immunology could have been helpful to increase our tolerance and faith on our immune system thus may prevent us to take unnecessary medicines; as well as to realise the necessity to complete the right dose in right time of a given medicine. Consequently we may help to keep our immune system properly activated. This in turn also helps us to reduce our growing physiological dependency on medicines and subsequent drug resistance.

Unnecessary hyper-dependency on modern medicine

Very often we used to say the 'vaccination against jaundice' while we mean 'vaccination against hepatitis B virus', infection of which results in jaundice. Jaundice however, may appear due to many other pathophysiological conditions. The word 'vaccination' means the precaution or preventive measure against the causative agent of the disease or infection. Administration of 'vaccine', a clinical or pharmaceutical preparation, which by it is unable to ignite pathogenesis (disease progression), helps our immune system to recognise the subsequent exposure to respective/similar culprits thus initiate fighting against disease production.

In principle, vaccine is either the part of the pathogen/antigen or the killed/inactivated pathogen/antigen or the genetically engineered part of the pathogen/antigen. Therefore, vaccination is not possible against a symptom like jaundice rather it is against the pathogen (or antigen) like hepatitis B virus.

Dependency on modern medicines like vaccines has resulted in administering even more than 10/20 vaccines in some cases by the age of 4/5 years starting soon after birth. We have observed the emergence of new generation drugs every now and then considering the drug resistance and new kind of diseases with high mortality and morbidity. How can we explain these events? This is either indicating the loss of our natural course of defence mechanism (immune system) or recurring infection by more powerful pathogens of the same or different kind. Recurrence of the deadly malaria, plague, emergence of SARS etc. is recent ones to be cited to exemplify these phenomena. We had envisioned that we could have eliminated the causative agents of some diseases like plague using drugs/medicines. But the pathogens reappeared with powerful armour disregarding our past

efforts to combat the old generation of pathogens. It seems our effort to treat a particular disease has been directed towards the elimination of the pathogen for the time being only! It is now well known that mortality due to cancer, non-communicable diseases like ischaemic heart disease is on the top of the list.

Our efforts therefore, at least did not increase the strength of our immune system. We should have given equal emphasis to empower our own defence mechanism or at least not to make it weaker so that further attack would not require powerful medication.

What should we do?

We should make our full effort to disseminate complete rather than partial and/or misleading information about diseases. To let our people understand the lessons of immunology we may consider the following suggestions for the better understanding of the knowledge and bring back our faith on self-defence mechanism, which has been provided by the mother's nature:

- Inclusion of chapters on immunology at secondary and higher secondary level of education.
- The university policy makers may think to open department or discipline offering 'Clinical biology' or 'Immunology' at undergraduate/postgraduate level. This will as well encourage more applied and basic research addressing the indigenous issues of this country.
- Incorporation of individual course on immunology not as a part/part of another related course in health related education program like MBBS, Nursing etc. Many reputed medical schools and universities in developed countries have been giving importance of this subject in such education program.
- Making more attractive and popular television and radio programs on health and diseases.
- More care must be taken in designing the billboards to attract attention of the people and convey the appropriate messages using right words.
- Introduce the monitoring sys-

tem, to evaluate the expected outcome of the publicity with the suggested improvements/changes.

- Let our drug administration and drug control authority is well equipped to monitor and control the selling of medicines without prescription.

- Above all, it is important to motivate and in some cases make people bound (declaring public places as non-smoking zone, for example) to avoid unhealthy products/habits to have sound health till death.

We may think that advanced clinical/medical facilities are enough to ensure good health. But assurance of good health does not necessarily mean sophisticated health care system.

Because we go to the hospitals/clinics only when we are sick. Good health means the maintenance of proper physiological functioning of the body, psychological stability and overall balance between oneself and environment. Other than the genetic diseases, we also know the kind of diseases, which are not caused by the pathogenic microorganisms but is due to some habits/practices like smoking, drug abusing, continuous administration of contraceptive pill, over physical and mental stress. Proper nutrition, hygiene and cleanliness, balanced mental and physical stress etc. are considered to be the preconditions to good health. It seems whether we shall remain healthy or not depends mostly on our life style. Therefore, it is important to understand how our immune system works and responds to different environmental stimuli or conditions. This knowledge hence will guide us to have an improved healthy life style. Finally, it is time for us to consider the holistic approaches for the treatment, prevention and control of disease, those help to

- Improve our immune system by natural means and
- Reduce the chances to let our immune system become weaker thus getting rid of disease or ailment with real confidence.

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Vitamins don't prevent pneumonia in smokers

Overall, the findings from a Finnish study suggest that vitamin E and beta-carotene supplementation have no effect on the incidence of pneumonia in men who smoke. However, it appears that vitamin E may benefit men who start smoking at a relatively late age.

"Vitamin E and beta-carotene affect various measures of immune function and accordingly might influence the predisposition of humans to infections," Dr. Harri Hemila, of the University of Helsinki, and colleagues write in the medical journal *Chest*. "However, only few controlled trials have tested this hypothesis."

To investigate whether vitamin E or beta-carotene supplementation affects the risk of pneumonia, the researchers used data from the Alpha-Tocopherol Beta-Carotene Cancer Prevention study. This study examined the effects of vitamin E and beta-carotene on the rate of lung cancer in 29,133 men who smoked at least five cigarettes per day at the start of the study.

The subjects were randomly assigned to receive the supplements or placebo, an

inactive substance. Neither the subjects nor the researchers were aware of which type of pill was given. The men, who ranged between 50 and 69 years of age, were followed for about six years.

In the current analysis, the main outcome measure was the first occurrence of hospital-treated pneumonia. The researchers identified 898 such cases in the hospital discharge register.

Neither vitamin E nor beta-carotene supplementation had any overall effect on the incidence of pneumonia.

"Only the age of smoking initiation was a significant modifying factor for both vitamin E and beta-carotene supplementation," Hemila and colleagues report.

Vitamin E supplementation decreased the risk of pneumonia by 35 percent among subjects who had started smoking at age 21 years or older. In contrast, beta-carotene supplementation increased the risk by 58 percent in this population.

This finding "warrants further investigation," the researchers conclude.

Source: <http://www.reuters.com>

Cancer drug may work for endometriosis too

Femara (letrozole), a drug used for advanced breast cancer, seems to be an effective treatment for endometriosis, according to findings from a small pilot study.

Endometriosis is an often painful condition in which tissue that normally lines the uterus is present elsewhere in the abdomen. Although a number of medical and surgical treatments are available, some women experience pain that does not respond to any measure.

"This study demonstrates the potential of (drugs like Femara) to significantly and rapidly reduce disease severity and pain, offering women a new and more effective way of suppressing endometriosis with fewer side effects," Dr. Serdar Bulun, from Northwestern University Medical School in Chicago, said in a statement.

The findings of the trial, which are reported in the medical journal *Fertility and Sterility*, are based on a study of 10 premenopausal women with endometriosis-related pain that was unresponsive to

previous treatments.

The women were treated with Femara and norethindrone, a hormonal treatment for endometriosis, for 6 months. A few weeks before and after the treatment period, a small endoscopic viewing device was inserted in the abdomen of each patient to assess the severity of endometriosis.

At follow-up, all of the participants had experienced a dramatic reduction in endometriosis. With the exception of one patient whose pain scores worsened during treatment, all of the patients reported significant pain relief. No significant changes in bone thickness or hormone levels were noted during the study.

"These results appear extremely promising and constitute the rationale for further investigation of this regimen as a first-line treatment for endometriosis," Bulun noted.

The study was funded by Novartis, the drug company which produces Femara.

Source: <http://www.reuters.com>

Wrist traction relieves carpal tunnel pain

A new device that temporarily places the wrist in "traction" holds promise as a treatment for the painful carpal tunnel syndrome, researchers report.

Carpal tunnel syndrome occurs when one of the nerves that pass through the wrist becomes compressed. Symptoms included numbness, weakness, tingling and pain in the fingers and hand.

There are several non-surgical treatments for carpal tunnel syndrome, including wrist splints and steroid injections. The new wrist traction device was studied in 30 people who had mild to moderate carpal tunnel syndrome, by a team led by Dr. Ronald M. Repice of the Delaware Valley Pain and Rehabilitation Center in Chester, Pennsylvania.

Repice is one of the developers of the device.

The device applies traction forces to relieve pressure on the median nerve by acting on the joints and soft tissues in the wrist, according to a report in January's issue of the *American Journal of Pain Management*.

Behaviour therapy helps people reduce the anxiety associated with obsession and reduce or eliminate compulsions. Sufferers are usually encouraged to face feared situations without resorting to compulsive rituals. Other techniques to address specific obsessions or compulsions are sometimes used.

What causes OCD?

There are several theories about the cause of OCD. Current thinking is that the condition is related to low levels of the brain chemical serotonin. It appears OCD may run in some families for genetic reasons. Some specialists believe OCD may afflict people who set unrealistically high personal standards for themselves.

What is the outlook?

Untreated, OCD is usually a lifelong illness with periodic worsening and improvement of symptoms. With treatment, obsessions and compulsions can be reduced or eliminated completely.

What treatment is available?

Treatment usually consists of behaviour therapy and/or medication.

What are obsessions and compulsions?

Obsessions are recurrent and persistent thoughts, impulses or images that cause marked anxiety or distress. A sufferer recognises the obsessions are the products of his or her mind, and tries to suppress them or to neutralise them with some other thought or action.

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