

# Ray of hope for the third world to combat pneumonia



Ongoing research about pneumococcal disease in Bangladesh in the microbiology department of the Institute of Child Health, Dhaka, Bangladesh. A child is getting vaccinated in the last photograph.

TAREQ SALAHUDDIN

Canada, Italy, Norway, Russia, the United Kingdom and the Bill & Melinda Gates Foundation committed US\$1.5 billion to launch the first Advance Market Commitment (AMC) to help speed the development and availability of a new vaccine which is expected to save the lives of 5.4 million children by 2030.

The AMC pilot represents the first step in a historic effort to create a market for life-saving vaccines for children in the world's poorest countries. The new initiative will target pneumococcal disease, a major cause of pneumonia and meningitis that kills 1.6 million people every year.

The pilot will provide 7 to 10 years of funding to support the development of future vaccines against pneumococcal disease and will include provisions to assure the long term sustainable supply and price for the poorest countries.

Dr Samir K Saha, Professor of Microbiology at the Bangladesh Institute of Child Health (Dhaka Shishu Hospital), who runs a PneumoADIP-supported disease surveillance project in Bangladesh and the country spokesperson of GAVI's PneumoADIP recently shares different issues of pneumococcal vaccine with The Daily Star.

## The pneumococcal vaccine market

The introduction of new vaccines into developing countries can only be accelerated by ensuring an affordable, sustainable supply. To meet this challenge, the global supply capacity must exceed the demands of high and middle income countries.

Low income countries have the largest demand for vaccine doses on a global basis, but represent the smallest potential market in revenue because of the need for a much lower price per dose. These are challenging problems, but PneumoADIP's supply analyses and forecasting can help overcome the obstacles to achieving affordable, sustainable supply.

## High demand in low income countries

PneumoADIP conducted a global market assessment to develop a firm economic basis for engaging industry, donors and countries. By developing a global assessment tool to calculate the potential vaccine demand in every country in the world in both the private and public sectors, PneumoADIP demonstrated that a potential billion dollar market exists for pneumococcal vaccines in low income countries. Without this robust global analysis, industry may continue to overlook the low income countries in favor of high and middle income markets. Multi-national and emerging suppliers are beginning to recognize the potential of the pneumococcal vaccine market in low income countries.

## Global initiative to introduce pneumococcal vaccine

Streptococcus pneumoniae is a serious, common, and preventable global health problem. World Health Organisation (WHO) estimates that pneumococcal diseases, mainly pneumonia and meningitis, kill more than 1.6 million people annually. This includes up to 1 million childhood deaths, making pneumococcal disease the number one vaccine-preventable cause of childhood death worldwide.

Decision makers in developing countries need accurate data at a local and regional level in order to justify dedicating resources to combating this disease. Supporting

research and surveillance in these countries to provide such data is one of PneumoADIP's strategic goals.

In the US, the benefits of childhood pneumococcal vaccination have exceeded everyone's expectations. The next challenge is to speed this life-saving vaccine to children everywhere.

## Pneumonia: The extent of disease burden in Bangladesh

Each year 80,000 children die of pneumonia and disease associated with pneumococcal bacteria like meningitis and 102,060 people die of pneumonia each year.

These huge numbers of deaths are vaccine preventable. And still there are many



Dr Samir K Saha, Professor of Microbiology at the Bangladesh Institute of Child Health

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deaths associated with these diseases those are not documented.

## The history of introduction of any vaccine

Vaccine is first marketed and available in the developed countries who develop it. After a long period of time, it is introduced in the developing countries when the cost of the vaccine gets down by selling in huge amount in the market of developed world.

But the question is — who need the vaccine most? The developing countries need the vaccine most since the disease is most prevalent there. But it is a matter of regret that the vaccines reach these wretched people at long time. Meanwhile, the toll of the disease takes millions of people.

## The importance and feasibility of pneumococcal vaccine in Bangladesh

To prevent these huge numbers of deaths we need to introduce the vaccine now. The vaccine is already in the market of developed countries at a rate that the developing countries cannot afford.

The US has prevented about 9800 cases of pneumonia. With about 80% serotype coverage, it exceeded everyone's expectations there.

Dr Saha showed that if we could introduce the vaccine now, we could prevent so far the death of 9797-17140 people among 30618 deaths due to pneumonia.

## How we should get prepared to have the vaccine

We just need provide the data showing the disease prevalence in our country to the global alliance to draw their attention.

In this regard, the surveillance is going on in the country in different research centers. Dr Samir K Saha is heading the surveillance in Bangladesh.

There are many ways to collect the three types of data about pneumococcal disease; however, in order for the data to be most useful for both scientists and policy makers anywhere, the data must be collected in the same way or a comparable way.

Pneumococcal disease (as all diseases) occur everywhere and are not limited by any borders. As long as data are comparable across borders, estimating disease burden for areas without surveillance is possible.

The data can focus on emphasising the importance of preventing unnecessary child deaths.

## What should be the role of the government

A key to the success of global health programmes is the ability to generate, effectively use and clearly communicate the vital information.

Dr Saha told that the government should come forward to inform the global alliance that how dire the need of the pneumococcal vaccine is in Bangladesh like other developing countries and how beneficial its outcome.

## A new way to break the vicious cycle: Credible demand forecasting to facilitate decision making

The introduction of new vaccines in developing countries has in the past been delayed due to a lack of incentives and adequate planning to address both supply and demand issues before launching vaccines.

A vicious cycle existed, wherein uncertain demand led to limited supply, which in turn kept prices relatively high and further increased the uncertainty of demand.

Over the last year, PneumoADIP has worked with a variety of stakeholders to develop and test an innovative demand forecasting model to help break this cycle.

The demand forecasting model developed by PneumoADIP is unique in its emphasis on consensus-building and sustainability. It brings together countries, donors, and manufacturers in an interactive model designed to underpin the accelerated development and introduction of pneumococcal conjugate vaccine in developing countries.

## Conclusion

Current evidence points to an effective pneumococcal vaccine that could begin to save lives now. We cannot afford to wait until another million children die next year. We must act now.

# The impact of obesity on children

DR TURIN CHOWDHURY

Computer or video game, fast food or junk food, lack of physical activities in schools — what is common among these things — the answer is urbanisation. Urbanisation is taking its toll on young kids of our society. If you look around yourself you may recognise more overweight boys and girls than ever before.

These children have every chance to carry obesity into their adulthood. These overweight children will turn most likely into overweight adults. The problem can get worse then.

Childhood obesity is associated with risk factors for the later development of chronic diseases like and complications associated with these conditions like heart diseases and stroke. Recent research showed that they may not have to wait to become aged to face these devastating results.

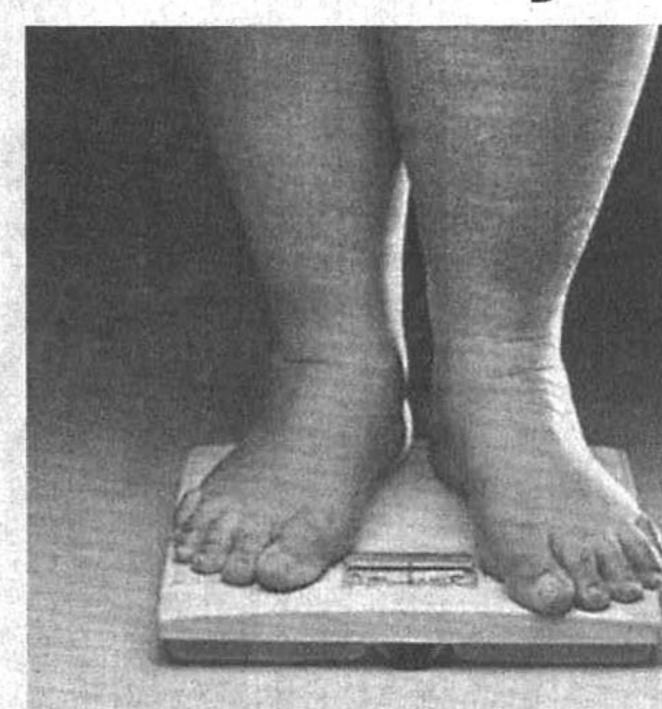
## What is obesity?

Obesity is the overload of body mass, which frequently may cause significant impairment of health status. Obesity should not merely be considered as a cosmetic problem; rather it should be considered as a pre-disease condition that means the person is more prone to develop various diseases possessing more risk factors.

## Effect of obesity on children

Overweight children are at increased risk of developing medical conditions that not only affect a child's present health but also may affect the future health status.

It increases the risk of high blood pressure, high cholesterol



and abnormal blood lipid levels, and type 2 diabetes.

It increases the risk of bone and joint problems.

It may aggravate the symptoms or increase the chances of developing asthma.

It may contribute to restless or disordered sleep patterns.

Overweight girls may have irregular menstrual cycles and have fertility problems in adulthood.

It increases the chance of liver and gall bladder disease.

It can lead to mental problems like depression.

## Intervening against obesity in childhood

If your child is overweight then it is very important to control the problem from the very beginning. The following steps can be undertaken toward off obesity in children:

Encourage children to be physically active for at least an hour a day. During the afternoon persuade them to play games with physical demand. Encourage the kids to play outside, such as to ride a bike or play football with friends.

Make efforts to limit sedentary activities, such as watching television and playing computer or video games. Be strict if necessary.

limit these to no longer than an hour.

Avoid junk food based diet habits in general. Discourage fast foods totally. Do not take your family to places serving such foods, rather go for healthy options.

Try to develop healthy eating habits in the family. Eat fresh fruits or fresh fruit juices and vegetables based snacks for afternoon item. Serve fruits and vegetables with major meals also.

Control the size of portions at the family table. If needed, serve food in plate for person rather than serving in bowls for self serving style.

Keep sweetened beverages out of the house. Even commercial juice should not be encouraged.

As a parent you should be a good role model for your children by participating regularly in physical activities and by maintaining healthy eating habits yourself.

Reward the children for success changes. This will keep the children motivated and more likely to stick to the plan. Encouragement and praising should be consistent with the goal and be given regularly.

Plan regular activities which the family can do together, such as going for a swim or going for a hike in the nature.

Intervention should begin early. Parenting skills are the foundation for success in this intervention. Teach by example and implement and practice of healthy lifestyle choices.

The writer is a faculty of lifestyle related diseases of Department of Health Science, Shiga University of Medical Science, Shiga, Japan.

## BROKEN HEART SYNDROME

# Is bad news bad for your heart?

MD RAJIB HOSSAIN

Mrs Mita Rahaman suddenly got a shocking news and immediately began developed chest pain. This sort of reaction — experiencing chest pain or a heart attack after hearing bad news — is sometimes shown in television and movies. But it is not just fiction.

Some people seem to actually get symptoms mimicking a heart attack after hearing bad news or experiencing other types of stress, a phenomenon doctors now refer to as broken heart syndrome. Today, the condition is also referred to as stress cardiomyopathy, stress-induced cardiomyopathy or apical ballooning syndrome which mimics a heart attack.

## What causes broken heart syndrome?

It is thought that a surge of stress hormones, such as adrenaline, might temporarily damage the heart of some people. How these hormones might hurt the heart or whether something else is responsible is not clear.

What we do know is the onset of broken heart syndrome is often preceded by an intense physical or emotional event. Some of the triggers of broken heart syndrome have included news of an unexpected death of a loved one, a frightening medical diagnosis, domestic abuse or losing a lot of money. Physical stressors, such as an asthma attack or car accident, also have been known to trigger

broken heart syndrome.

## Is broken heart syndrome harmful?

In rare cases, those with broken heart syndrome can die of the disorder. However, most people who experience broken heart syndrome quickly recover and do not suffer long-lasting effects.

## Who is at risk of broken heart syndrome?

Broken heart syndrome usually affects women far more often than men.

## What are the symptoms of broken heart syndrome?

Broken heart syndrome can mimic a heart attack, with common symptoms being chest pain or shortness of breath. Any persistent

chest pain could be a sign of a heart attack, so it is important you take it seriously and seek immediate medical help.

## How is broken heart syndrome different from a heart attack?

Most heart attacks are caused by a complete blockage of a heart artery due to a blood clot forming at the site of narrowing from fatty buildup (atherosclerosis). In broken heart syndrome, the heart arteries are not blocked, although blood flow may be sluggish.

Coronary angioplasty and stent placement are commonly used for treatment during a heart attack, but these procedures are not helpful in broken heart syndrome since there is no blockage.

"While our study did not show that reducing iron led to across-the-board decreases in overall mortality, or combined death plus non-fatal (heart attack) and stroke, it did support the theory that vascular health might be preserved into later life by maintaining low levels of iron over time," said lead author Dr Leo Zacharowski.

He said blood letting is "safe and inexpensive, and correlates to routine blood donation (and) appears to contribute to improved vascular health."

Excess iron in the blood is thought to promote free-radical damage to arteries, particularly in the early stages of heart disease.

Source: Journal of the American Medical Association

## DID YOU KNOW?

# Blood donations may help donors' health

Blood donations may help keep the body's circulatory system healthy by reducing stores of iron, but the effect may not work for older people, a U.S. study suggested.

Researchers at the White River Junction, Vermont, Veterans Affairs Medical Center and Dartmouth Medical School said they looked at 1,277 men and women ages 43 to 87 who had peripheral arterial disease, a common condition in which narrowed arteries reduce blood flow to the limbs. The study lasted for six years.

Blood was drawn to promote iron reduction at six-month intervals from some of the patients but not from others. As a whole there was no significant difference between the two groups in terms of deaths, heart



attacks or other problems.

But when the researchers analysed the results just for younger

patients aged 43 to 61 they found fewer deaths from all causes in the iron-reduction group, and also fewer

## World Health Organisation says ::

# Warming to spread disease, hunger in South Asia

Millions more South Asians will suffer from diseases like malaria and cholera, or go hungry due to global warming, but governments are not fully aware of the dangers, the World Health Organization said.

A United Nations climate panel report last month predicted climate change would result in temperatures rising by between 1.8 and 4.0 Celsius (3.2 and 7.8 Fahrenheit) in the 21st century. But the WHO's environmental health adviser for South Asia, Alex Hildebrand, said little attention had been paid to the impact rising temperatures would have on the health of the region's 1.4 billion people.

# One billion poor suffer from neglected diseases

One billion people in tropical countries are still suffering from debilitating and disfiguring diseases associated with poverty, but many remain untreated due to official neglect, health officials said.

Despite the existence of inexpensive and safe treatment, those who suffer from diseases such as leprosy, elephantiasis and yaws remain untreated due to a lack of resources and political will. The diseases were not in the headlines and not global problems like polio, HIV/AIDS and malaria contributed to the lack of attention. Rather these diseases are closely related to poverty. Many who contract the diseases suffer from discrimination and are shunned by their communities.

