

DOWN WITH HYPERTENSION

The Prevention and Control of High Blood Pressure — I

(This is the second article in this series on hypertension)

Mortality Figures From Hypertension are Changing

"Down with hypertension" was the theme of the World Health Day more than ten years ago. Since then the mortality from hypertension and related conditions — stroke, and heart attacks have been progressively coming down in some of the developed countries. However, the mortality from these conditions, according to available indications, in many developing countries including Bangladesh, are on the rise. The increases in these rates are generally assigned to changes in the life-styles including more stressful living conditions. The rising consumption of food rich in saturated fats by a growing section of the population, overweight, sedentary habits, lack of regular physical exercise and heavy smoking have been incriminated. In order to gain a better insight into the rationale for measures for the prevention and control of hypertension, it is important to know a little more about the pathogenesis of this condition (mechanism in the progression).

Narrowing of Arteries Leads to Hypertension

In defining hypertension (Feature: High Blood Pressure or Hypertension: The Silent Killer, the Daily Star December 11, 1991), we noted that one of the mechanisms for its development is the narrowing of arteries and arterioles requiring a greater force of pressure on the part of the heart to push the blood into and through the vast network of arteries, arterioles, capillaries (more than 80,000 miles of this vascular network) to the

various organs and tissues of the body.

Salt Retention Increases Blood Volume and Blood Pressure

As the heart has to work harder to pump a larger volume, the blood pressure would also rise when the blood volume increases. This happens if too much salt and water are retained within the system, rather than excreted by the kidneys. As excess of sodium chloride in the system draws water and increases the volume of the blood, thereby raising the blood pressure. Just as a larger volume of fluid needs a greater force to be pushed through a pipe, so also a larger volume of blood requires a greater force on the part of the heart to be sent circulating to the distant parts of the body, thus raising the blood pressure.

The Kidneys Monitor Blood Pressure

Like the heart performs the task of pumping blood and maintaining the supply of oxygen and nutrients to all parts of the body, one of the many functions of the kidneys is to monitor the blood pressure. The kidneys send forth additional hormones into the system, whenever the blood pressure falls too low. However, in the event the kidneys are diseased or there is a blockage of the renal artery, false signals for these hormones may be sent out, with the result that the blood pressure may rise. The kidneys in some other individuals are unable to process salt in the normal way. They may retain salt even if common salt has not been consumed in excess, causing an eventual rise in the blood pressure.

Renin, Angiotensin, Salt and Blood Pressure

The kidneys produce a sub-

Prof. Habibuz Zaman

stance called renin, which plays a part in blood pressure regulation indirectly by initiating a series of hormonal effects. One of the powerful substances summoned in angiotensin II — which asks the kidneys to hold on to sodium, rather than to excrete it. This results in increasing the volume of the blood, thus raising

the blood pressure.

Secondary Hypertension Can be Cured

In no more than 10 per cent of cases of hypertension it is possible to identify a direct cause — such as a disease of the adrenal gland or a narrowing of the artery to one of the kidneys. These patients of what may be called "secondary hypertension" are fortunate in that a surgical operation or the procedure of "ballooning angioplasty" of the renal artery (for the removal of arteriosclerotic plaques, narrowing the artery), can remove the cause for the hypertension and cure it. The vast majority of hypertensives, however, have no demonstrable cause and must receive continuing attention, including medication for an indefinite period.

Essential or 'Primary' Hypertension

So far we have seen that inappropriate food (a high fat, high cholesterol diet), an excess of common salt (in at least some of the cases) and also over-weight are aetiological factors, for the onset of hypertension, as opposed to a definitive cause, such as disease of the adrenal glands, kidneys or a narrowing of the renal artery, as mentioned above. Therefore, it is not entirely correct to identify the first group as "essential hypertension" (in the medical literature), thereby implying a disease of essentially unknown origin. They may better be designated as "primary" hypertension, as suggested by several experts in the field.

Control of Hypertension Possible with Present State of Knowledge

Preventive measures can be planned and strategies for the control of a disease developed

- While mortality from hypertension and related conditions (stroke, heart attacks and kidney failure) are coming down in several developed countries (notably USA), these are on the rise in many developing countries, including Bangladesh.
- The increases in these rates in developing countries are generally assigned to changes in the life-styles (heavy smoking, consumption of food rich in saturated fats, overweight, lack of physical exercise, stressful living conditions, intake of alcohol).
- Excessive salt intake may increase blood pressure.
- Kidney disease may cause hypertension.
- Control of hypertension is possible with the present state of knowledge.

only if something is known as to the causative factors or agents involved. These measures are applicable to individuals at special risk or to the community at large (target populations may be identified).

However, not everything must be known about a disease before it is possible to undertake measures for its prevention and control. Witness the use of the cow-pox vaccine for the prevention of small-pox in humans, based on the observation that individuals, who handled and milked cows infected with cow-pox, did develop small pustules in their skin, but were eventually protected from contracting small-pox.

Admittedly it took over 150 years to eradicate small-pox, since Jenner, a British physician, found in 1796 that inoculation with material from lesions of cow-pox could protect humans against small-pox. Thus hundreds of millions of people were protected by the cow-pox vaccine on an empirical basis, when little was known of the small-pox virus (for very many years).

As in the case of many other diseases, preventive actions against hypertension and its complications need to be directed to individuals at risk, as also to the community at large.

On the basis of present-day knowledge, individuals at greatest risk are males above the age of 30 and post-menopausal women, who smoke, who are overweight, who lead a sedentary life and undertake little or no physical exercise, who are fond of rich food with a high content of saturated fats and cholesterol and who live under stressful conditions.

(To be continued)



Women's health in Bangladesh will deteriorate unless they are adequately looked after. — Star Photo

An exciting breakthrough has emerged in the battle against spina bifida, one of the most serious congenital defects with which an infant can be born. Research completed this year in seven countries has shown that childbearing women who regularly consume supplements of the B Vitamin folic acid can dramatically reduce their risks of giving birth to babies with the crippling deformity. The advantages of the preventive treatment are many. Folic acid is readily available in unprocessed food and green leafy vegetables. It has no known toxic effects and can be readily excreted by the human body. Even consuming excess quantities of the vitamin is not believed to be harmful.

Breakthrough in the Battle Against Spina Bifida

Giving birth to an infant with spina bifida, a deformity which leaves its victims paralysed from the waist down, is one of the most devastating experiences a woman can have. Now, research in seven countries has shown that a simple treatment can dramatically reduce a childbearing woman's chances of conceiving a spina bifida baby. As Gemini News Service reports, the discovery many benefit women in the many developing countries where abortion is illegal and antenatal diagnosis not widely available. by Dr Sanjiva Wijesinha

undergo is to give birth to a baby with a major congenital abnormality such as spina bifida. Other congenital defects such as cleft lips, club feet and even many "holes in the heart" can now be surgically repaired to provide a child with the opportunity of leading a full and normal life. But the most advanced surgeons can do little more for some major congenital abnormalities than to allow a child to grow up physically and psychologically crippled, and with no guarantee of a normal lifespan. Such is the case with neural tube defects, popularly known as spina bifida.

In children born with the deformity, some of the vertebrae which make up the spine are incompletely formed. As a result, the spinal canal — which normally takes the form of a strong bony tube protecting the nerves of the spinal cord within it — is only partially closed. Instead of a tube shape, the "canal" takes the form of a groove or gutter that covers the cord in front but leaves it exposed on the child's back. Left unprotected, the spinal cord does not develop properly. The long nerves which should run down to the legs, the bladder and the bowel are often twisted and abnormal. Since these central nerves are not amenable to repair, such children cannot move their legs or control their bladders or bowels. In effect, they are paralysed below the waist, and will grow up confined to wheelchairs with no hope of normal sexual function. Even spina bifida children with normal nerves and normally functioning bowels, bladders and limbs are susceptible after surgery to a build-up of pressure in the spinal canal which can lead to an enlargement of the head — hydrocephalus — which needs

repeated operations for relief. Before the Fifties, virtually all children born with major neural tube defects died early in life. About 40 years ago, surgeons began operating on such children at birth. While surgery could close the defect in the spine, no surgery was possible on the nerves themselves. The children grew into adults with no urinary or faecal control, incapable of walking or having sex. After 20 to 30 years of performing such life-saving surgery on newborns with spina bifida, many doctors began to realise that trying to perform surgical miracles on these children was self-defeating. With abortion legalised in most countries and technology becoming available to diagnose congenital defects while of foetus was still in the womb, treatment of neural tube defects turned toward prevention. Obstetricians began screen-

ing expectant mothers to make sure the foeti they were carrying did not have spina bifida. Those women carrying foeti with the condition were offered the option of an abortion. Still, this was not an ideal solution. Mothers who had conceived and carried a foetus in their wombs for three to four months were suddenly told that their babies would have a major deformity and advised to have an abortion. Research workers felt they had to find a way of preventing the very conception of babies with spina bifida. This, they felt, would help women to avoid the trauma of a therapeutic abortion and be of even greater benefit to the many women who lack access to antenatal diagnosis or abortion. As far back as 25 years ago, it had been suggested that regular consumption of the B vitamin folic acid might prevent a woman from conceiving a baby with a neural tube defect. To discover whether this was true, researchers recruited over 1,800 women who had previously given birth to a child with a neural tube defect and divided them into two basic groups. In one group, the women were given a daily tablet containing a dose of four milligrams of folic acid, which they kept taking until 12 weeks after they became pregnant. In the second group, women were given tablets identical in appearance but containing no folic acid. The study was designed on a "double blind" basis; neither the doctors administering the tablets nor the women taking them knew which pill was being taken. Only at the end of the survey was the code broken, and the group to which each woman had been assigned made known. At the end of the study, 1,195 women had become pregnant and given birth. Both groups of women had essentially similar attributes of age, social class and number of previous pregnancies. But there was one striking difference: of the approximately 600 women who had taken folic acid supplements, only six gave birth to babies with spina bifida, whereas no fewer than 21 babies with spina bifida — three and a half times as many — were conceived among the other 600 women who had not taken the supplements. Regular consumption of folic acid tablets had been shown drastically to reduce the risk of giving birth to a baby with a neural tube defect. The authoritative medical journal Lancet, summing up the significance of the latest breakthrough, says: "This research study should lead to major benefits for infants, mothers and the whole community."

Asthma Sufferers Now Have More on Their Minds

were at their peak in the mid-1980s — more than 2200 died from asthma in 1986. And doctors surveys indicate that more than one in ten routine asthma patients will need an average of two home visits a year to deal with a wheezy emergency. The chances of a diagnosed asthma patient dying from the disease remain at about one in 500. It seems that there is more asthma about today than there was in the past, but nevertheless specialist doctors are critical that so many people — and especially children — continue to suffer. Under-recognition and misdiagnosis remain the principal reasons for the prolonged duration of symptoms in asthma sufferers, reported one specialist in December. This poor understanding of asthma by family doctors has recently prompted new treatment guidelines from the British Thoracic Society — in which inadequate inhaler technique and under-use of preventive medicine are singled out as areas of concern. In particular, doctors are advised a programme of "stepped care" in which the dose and type of therapy are intensified as symptoms get worse. Patients who need a puff of relief inhaler more than once a day are recommended for longer term preventive treatment. Importance is also given to the peak flow meter, a breathing tube which measures lung ability. Peak flow meters are now available on the NHS, and allow patients to monitor their asthma without relying on wheeziness alone. A falling lung ability would be a cue to step up treatment. However, the question of appropriate treatment has just been thrown into some confusion by two reports in the im-

portant medical journal The Lancet. One study showed that an inhaled drug called fenoterol is supplied in too high a dose and thus causes unacceptable side effects. The other study suggested that the usual way in which relief inhaler drugs are used is not necessarily the most effective. The reports caused some anxiety, and advice form the asthma patient support groups was that sufferers should wait for the advice of their doctors. Despite the reports, mainstay routine treatment would still be that prevention is best given with inhaled steroid drugs, and short-breath symptoms treated "on demand" with an inhaled dilator drug, according to The Lancet. Meanwhile, doctors are urged to recognise asthma sooner in children, and to confirm their suspicions with treatment and peak flow meter readings. —FII

Contraceptives Non-use Traced to Low Education

Studies find overemphasis on sterilisation in India without giving due attention to importance of birth spacing.

In India's southern state of Karnataka, contraceptive use seems to be one aspect of life where religion has little influence. Very few women cite religion as their reason for not using contraceptives. The most common reason — which should be obvious — the desire to have many children. But then not all things are obvious in population dynamics, as in India's much vaunted success with female sterilisation. In many Karnataka villages, nearly nine out of ten women have undergone sterilisation. In India's southern state of Karnataka, more than 80 per cent of 4,000 women not using contraceptives said they prefer sterilisation in the future. These stark figures belie what the Indian Institute of Management-Bangalore study says is "an overemphasis on female sterilisation in the national family planning programme, with birth spacing not getting the attention it deserves." It underscores the findings of another study in the western state of Gujarat (made by the Population Research Center-Baroda) that "the current patterns of contraceptive use — that is, the high prevalence of sterilisation and low reliance on modern birth spacing methods — are not having the desired impact on the overall fertility rates." The main reason is that less educated women are less likely to use either pill or intrauterine devices (IUDs). Moreover, women whose ideal family size is four or more children are also less likely to space births. They are more likely to go directly to sterilisation at an older age, having achieved their desired family size or, as is generally the case, surpassing it. Inaccessibility to health services also contributes to a lack of knowledge of other methods and favours the use of sterilisation. The studies are part of an 11-country study conducted by

the World Health Organisation and national research teams in Bangladesh, Chile, China, India, Kenya, Mexico, Nigeria, Philippines, Thailand and Turkey. These recently completed studies have produced a wealth of new data on how people choose and use contraceptives — what they know or do not know and, on the basis of such information, how policymakers can improve family planning strategies and services. Contraceptive use, it is now clear, is different in different populations. In Brazil and Sri Lanka, for example, 40 per cent of all contraceptive users use female sterilisation. But only 2 per cent of couples in Indonesia use this method. The Karnataka study revealed interesting perceptions on female sterilisation. This method was preferred over male sterilisation because people believed that vasectomy reduced a man's ability to work. Female sterilisation is more acceptable because, it is believed, women did less work. There is also the chance that male sterilisation — which is not 100 per cent fail-safe — might not work. If the woman gets pregnant at this point, marital problems could arise. Almost all the women interviewed knew about female sterilisation. But half of them could not specify any advantage about the method. Some 60 per cent knew about intrauterine devices (IUDs) and 42 per cent knew about the pill. Only 18 per cent knew about the condom. Knowledge of other methods was rare. In the case of the oral pill, IUD and condom, even more women failed to cite any advantages. The rest mention primarily birth spacing as an advantage but few mentioned reliability and convenience. Still, many complained that female sterilisation caused them backache, stomachache, irregular periods, white discharge, general health deterior-

ration and joint pains. The Karnataka study also found that more educated women were more likely to use methods other than sterilisation — a fact borne out by the Gujarat study. There low education and acceptance of sterilisation go together. Compared with women who had undergone sterilisation, women who used the pill and the IUD are younger, more educated and had fewer children. They were also relatively well-off. And in line with the findings of the Karnataka study, 71 per cent of those who had accepted sterilisation had never used any contraception. The Gujarat study interviewed 1,000 sterilised women, 1,000 users of IUDs and 600 users of the pill. Compared with illiterate women, those who had primary education had about three times higher chance of having tried other contraceptives before getting sterilised. And women with high school education or higher were seven times more likely to have used another contraceptive prior to sterilisation. Women's age and family income are also associated with the choice of sterilisation. For example, compared with younger women (25 years old and less), those aged 30-34 had two times higher likelihood of having used another contraceptive before sterilisation. Similarly, women from higher income families had a greater chance of using other contraceptives. For whom the ideal family size was two children, they were three as likely to have used compared with those whose ideal size was four children or more. Shorter distance between home and the health clinic was also related to prior use of other contraceptives. Women living within one kilometre of a health clinic had more chances of access to and use of other contraceptives. —Depthnews Asia

THE many millions of Britons who suffer from the wheezy disease asthma will not need telling that December was colder than any winter month of the past three years. It was the weather which many asthma sufferers dread, when a gasp of cold air sets off a bout of wheezing and worsening of symptoms. What actually sparks an asthma attack is still not entirely clear, even though as many as one in ten of Britain's population suffers. Most usual causes are allergic — anything from grass pollens in the hay fever season, to a tiny bug lurking in mattresses and carpets known as the house dust mite, to horse hair or cat fur. Some people experience shortness of breath when the weather's cold, and many of the emergency asthma admissions to hospitals happen on a damp foggy night. Exercise can also bring on wheeze. The range of drugs to treat asthma has grown over the past decade, such that many specialists now say that no-one should suffer the misery of asthma with so much effective treatment available. Yet the suffering does continue, and asthma deaths are almost as many today as they