Editorial

Polio eradication campaign in Pakistan gets a setback

Recently, on 17th December 2012 the Lady Polio workers in various towns of Pakistan, were attacked and killed by some unknown terrorists – Why? All the newspapers and electronic media flashed the shocking news that the lady workers who started the campaign of immunizing the children in the country, to eradicate the dangerous disease, were nipped in the bud. The pattern of killing in all the cases was the same, from north to south, suggesting that the culprit were the same, who were working under similar instruction from some misguided leaders. The entire machinery of the government has failed to protect the workers with the result that the campaign has been stopped and held in abeyance. We have received condemnation from throughout the world for this inhuman act. The W.H.O and other UN agencies, band the authorities of the government of Pakistan, who are at a loss to know the reason why some body or group could be acting to stop such a campaign which would save the lives of many individuals from becoming crippled or lame. One reason identified is to defame and destabilize Pakistan. But this does not seem to be the sole reason. Polio worker were performing the duty of protecting our children from becoming disabled. This was a noble cause. Let us see what Poliomyelitis is!

Polio is a highly infectious disease caused by one of the three related viruses. Now a day’s polio vaccine comes in three separate parts and provides a life long immunity to each type of polio virus. Thanks to the extensive Vaccination Campaign, poliomyelitis – the disabling disease, has been eliminated in most of the developed countries. It however remains common in many poor areas of the world especially Afghanistan, Pakistan, Burma and Africa and some other Third World countries.

The Polio virus affects the Central nervous system invading the motor cells of the spinal cord and parts of the brain, and depending upon the virus involved cause symptoms ranging from a mild gastric disorder to impaired breathing, muscle wasting and paralyses. In more serious cases it may lead to meningitis with stiff neck and over sensivity to light. In some cases one leg or arm becomes progressively weaken, or in exceptional cases all the limbs and the muscles that control swallowing and breathing may be affected. If the brain cells are affected the circulation may collapse causing a drop in blood pressure and problems with the heart rhythm.

After a rather variable time the acute inflammation causing the symptom settles down as the body immune system gets the better of the virus. The weakness and the symptoms may then recover to some extent as the undamaged nerve cells take over the function of those destroyed by the infection. However any muscle wasting that has already occured cannot be reversed.

It has been estimated that during and epidemic, for every paralytic, diagnosable case, there may exist dozens of non paralytic or abortive poliomyelitis. Karl Oscar Medin in 1890 called attention towards this epidemic. Karl Landgeiner and Hans Popper successfully transmitted poliomyelitis from man to monkey intranasally in 1909, using a bacteria-free filtrate of mucus from throat of human cases. This proved the cause to be a filterable virus. In 1938 John R Paul, Jame D Trash and Albert B. Sabin discovered a virus in human feces and sewage which supported a theory of infection by swallowing. Milk-borne epidemic has also been reported. Direct or indirect immediate indirect, human contact (finger,
handkerchief, clothing, bed-linen) are supposed to be likely cause of spread. Poliomyelitis is wide spread over the world, but its age and seasonal prevalence vary widely. It seems non seasonal in tropics, an early summer disease in the subtropics and late summer disease in high attitudes. In general, the areas with higher living standard, which have better sanitation, nutrition and medical care, show an increasing incidence of adult poliomyelitis. Though it is mainly a childhood disease, it may occur among adults and is apt to be specially sever. The incubation period is about one week, although 3-35 days may be possible range. After penetrating the lining of the respiratory or alimentary tract, the virus spreads to the brain and spinal cord.

Symptom:
The first symptom is a transitory temperature rise, often with vomiting and headache, lasting one or two days. These symptoms recur a day or so later with stiff neck and back and the development of soreness in the muscles that are about to be paralyzed. A localized limb paralysis with loss of regional reflexes, rapidly ensure. The worst of paralysis is over in a week, after which a surprising recovery of muscle function may take place.

Treatment:
Viruses, unlike bacteria, are very difficult to get rid of once they have entered the body. No specific curative or antibiotic drug has been found. Immune human blood serum or pooled gamma globulin theoretically should confer temporary protection if injected several days before paralysis, but they have been proved to be infective. Complete bed rest is important. Recovery of function can be facilitated after the acute stage of exercises under water, best given in specialized orthopedic hospitals.
Dr. Jonas Salk provided the first effective vaccine given by injection. The Salk killed-virus vaccine is a mixture of the three immunological types of poliomyelitis virus. Extensive mass immunization in the U.S. between 1954-1958 confirmed the protective value. An oral, live-virus vaccine was devised by Dr. Albert Sabin and was tested in a large scale field trial in Mexico and Soviet Union. In 1960 the US Public Health Service accepted the Sabin oral vaccine and licensed for manufacture Type I and II in 1961 and Type III in 1962. However after a polio type illness occured in a number of immunized persons, mostly adults, the public health services advised that Type III vaccine be administered to children and adults in high-risk areas only. The risk was however found to be very minimal and so after 1962 a full scale, oral vaccine immunization was recommended to go ahead with an emphasis on immunizing children and young adults.
Though immunization has grately reduced the risk of incidence of polio, care must still be taken. Polio cases should be hospitalized and kept reasonably isolated. Unnecessary contact with confirmed or suspect cases should be avoided. Other preventure measure are the avoidance of excessive fatigue and chilling and postponement of nose and throat operations until the fall. One should also refrain from swimming in polluted water. Food, water and milk should well be screened from flies.
The poliomyelitis virus was divided into three main immunological types (Lansing, Leon and Brunhilde) virus 30μ in diam. By 1950 F. Enders successfully grew all three main strain of the virus in tissue culture. By 1955 all three have been concentrated, purified and crystallized.
There does not seem to be any genuine reason why polio campaign should be targetted. However there are some rumors floating in the air that the Terrorist consider this campaign as anti-Islamic. Some terrorist believe that the antipolio vaccine contains some drugs that lead to impotency and ultimately cause birth control, which is anti-Islamic. There are many life saving medicine which may ultimately cause impotency. One has to choose between safety of life and potency. It is high time it has to be conveyed to the terrorist that in most of the developed countries polio has been totally eliminated and has become a
disease of the past, through a systematic anti-polio campaign of immunization. Other countries who still have occasional occurrence are struggling hard to eliminate it. Why should be the left behind.

S. R. Baquar
Editor-in-Chief
Baqai J. Medical Science
BMU, Karachi.