Introduction

Measles is a universally occurring, highly contagious, seasonal disease affecting every person in a given population in the absence of immunization programme (Black F.L., 1962; Langmuir A.D., 1962). The peak transmission usually occurs among young children, but outbreaks in isolated communities involve many older individuals. Measles is transmitted primarily from person to person by large respiratory droplets but can also be spread by the airborne route as aerosolized droplet nuclei (Preblaud, Samuel L Katz, 1988). The period of maximal contagion is during the prodrome. Secondary attack rates in susceptible household and institutional contacts are high and can be of the order of 90% or greater. Since virus is excreted before and after the appearance of rash, the onset of exanthem in secondary household cases occurs an average of 14-15 days after that in index cases. Asymptomatic transmission from exposed immune person has not been demonstrated (Black F.L., 1982).

In developed countries, in majority of the parts, school children have the highest rate of infection and are known for the largest proportion of cases (CDC - Report No. 11, 1982). However, in dense urban areas, transmission among preschoolers takes on greater importance. While serious complications occur, they are relatively rare compared with the situation in developing countries (Yorke J.A. et al, 1973). In U.S.A. prior to the introduction of measles vaccine in 1963, major epidemics were reported approx. every 2-3 years. Each year, disease peaked in late winter and early spring. The highest incidence of disease was in children between 5-9 years of age who accounted for more than 50% of reported cases. More than 50% of cases were in children younger than 15 years old. The highest risk of death was in children less than 1 year of age and in adults (Barkin R.M., 1975; Rand K.H., 1976).
The measles virus is very contagious and it can be expected to circulate wherever a relatively large number of susceptibles congregate. The virus is in circulation even in the presence of a low population susceptibility rate. The fact explains the outbreaks that were typical among military recruits before institution of routine measles vaccination (Crawford et al, 1981).

The average age of measles infection is much lower in developing countries than that observed in developed countries. In some parts of Africa more than 50 % of 2 year old and 100 % of 4 year old children may be expected to have had measles. Malnutrition and rapid loss of maternal antibody may be the reasons why these children are susceptible at an earlier stage than those in developed areas (Grifith, 1975; Bull. W.H.O. 55, 1977; Abdurrahman, 1981; Halsey, 1985). Infection in turn results partly from the early age at which infants are exposed to the community at large and prolonged excretion of virus from malnourished children (Morley, 1974; Hayden, 1974; Assaad, 1983). This finding is in contrast to developed countries where infants are usually home bound until they enter school.

Measles ranks one of the leading cause of childhood mortality in developing countries. Before the ‘Expanded Programme of Immunization’ (EPI) was started, there were an estimated 130 million cases of deaths due to measles (WHO/EPI/Gen. 92.3). Estimates of the developing world for 1990 were 29 million ill with 8,80,000 deaths. Thus, measles is responsible for more deaths than any other EPI target disease. Complications of measles include diarrhoea, pneumonia, otitis media, blindness and encephalitis leaving many thousands of children disabled each year.

Not only is measles an acute illness which causes death and complications, but the long term impact of infection is also increasingly being recognized. For many months after the
acute attack, the effect can be seen in the reduced survival rates of infected infants. When compared with those not infected, the children who are infected with measles virus may survive the acute disease, but have a greatly increased chance of dying from a variety of causes over the following months. The younger the age of infection, the more notable is the effect of this delayed mortality. It is, therefore, imperative to protect children at the youngest possible age. The true impact of measles virus infection is much greater than is usually recorded in the number of acute deaths generally attributed to measles making the control of this disease an even greater priority.

PREVENTION / CURE OF THE DISEASE -

Taking into account the losses on account of human life and the social liabilities of the disabled children because of measles, it is of utmost importance to prevent this disease from culminating into an horror of measles epidemic. Treatment of the disease by passive immunization does exist but has got an extremely limited scope as is usually in many of the diseases. Chemotherapy also has proved to have insignificant effect, although in some cases drugs like Levamisole (Wesley, 1982), Ribavirin (Banks G., 1984) have been reported. However, at present there is no specific proven therapy. Use of passive protection (such as administration of antibodies) has a disadvantage that the immunity conferred is only temporary usually 3-4 weeks (Stiehm E.R., 1979). There are certain situations where immediate and a relatively reliable prophylaxis against measles is desirable. These situations include exposure of children under 1 year of age, pregnant women, immunocompromised patients and other susceptible persons with contra indication to the receipt of live vaccine. Such recommendations are made from studies indicating that immunoglobulin administered in doses ranging from 0.05 to 5.0 ml per kilogram within 6 days after recognized exposure to a case of measles is effective in
modifying or preventing subsequent disease (Perkins, 1965; Brody, 1964). Current recommendations are to administer immunoglobulin intramuscularly in a dose of 0.25 ml per kilogram within 6 days of exposure (M.M.W.R., 1987).

The only way left out in the course of combating this disease is to prevent it by actively immunizing the whole susceptible population by using vaccine.