mentioned.

4. The patient was put on diltiazem as he had normal LV function (EF 50%) and no pulmonary congestion.

5. The comments in the letter to the editor do not have relevance to the case under discussion. It was not the intention of the authors to discuss the management strategies of NQWMI. This was only a case report on an individual having recurrent angina after a NQWMI.

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Say No to MMR; Epidemiological Reasons : A Rebuttal

Dear Editor,

Refer correspondence titled 'Say no to MMR; Epidemiological Reasons' (MJAFI, 2000;56:275-6). We do not agree with the various contentions of the correspondent regarding vaccination for Mumps and Rubella.

Mumps vaccine was introduced in the US in 1967 and routine use was recommended in 1977 [1]. This led to a steady decrease in the incidence rate of cases. In 1995 only 906 cases of mumps were reported in the US as compared to 185,691 cases in 1967 [1]. A relative resurgence was seen in the mid 1980s when outbreaks occurred in high schools, college campuses and in workplaces [1]. However, even at its peak the incidence rate never rose beyond 7 per 100,000 population as compared to almost 90 per 100,000 population in the prevaccination era [2]. Thus even though there was an epidemiological shift there was no actual increase in incidence. As regards sterility, we submit that this will occur only as a consequence of bilateral orchitis and it has been uniformly agreed that sterility following mumps is rare [1,3].

UK adopted a programme of selective immunisation as recommended by the correspondent. Adolescent school girls and women at high risk (nurses, teachers) were immunised with rubella vaccine [4]. However, despite an uptake rate of 90 percent it was found that 2.8 percent of young women were still susceptible to rubella [5]. The UK Government accepted that complete immunisation of the target population was not a realistic goal and therefore adopted

universal childhood immunisation in 1988 [5].

We entirely agree that India should learn from the mistakes of other countries. India has a well developed programme of immunisation in childhood with high uptake rates. We should do our best to utilise this to attempt to eradicate these diseases from the country.

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Say Yes to MMR : Ethical, Scientific and Practical Reasons

Dear Editor,

This refers to the letter published in your journal about saying no to MMR vaccination since it had caused an epidemiological shift of the diseases towards older age after its introduction [1]. MMR is being advocated by the Indian Academy of Paediatrics (IAP) based on the recommendations of its Immunization Committee. The choice of MMR vaccine was based on the experience of several researchers on the need to protect women of childbearing age from rubella infection as there are several published data to show that congenital rubella syndrome (CRS) occurs with some frequency in our country, though the true magnitude is not known as our epidemiologists have yet to generate sufficient qualitative and quantitative data [2,3].

MMR was introduced at 15-18 months in India to prevent CRS, mumps and more importantly to give a second dose of measles, so as to help those children with primary vaccine failures (though the net result will be no better than that of a single dose at 15-18 month, but with the added advantage of protection against measles during the interval of 9 months to 15-18 months) [4]. This is an indirect strategy that aims to protect women of childbearing age from exposure to rubella virus by interrupting its transmission via a herd

immunity effect and hence leading to a rapid reduction in cases of congenital rubella [5]. On the other hand, the immunization of adolescent girls, direct strategy, does not interfere appreciably with the transmission of the rubella virus and mainly aims to protect women of childbearing age from the disease [6]. This was initially being followed in UK and Japan and the vaccine was recommended only for schoolgirls (10-12 years) and susceptible women but it had little impact on the incidence of congenital rubella and the British authorities had to change to US strategy which was a three-step programme i.e., vaccination of all infants at 12-15 months, the second dose at 4-6 years or should complete the schedule by 11-12 years and thirdly, screening women of child bearing age for rubella immunity and vaccinating those susceptible. Since then the incidence in UK has remained low similar to US.

We have almost negligible epidemiological data, no health economic assessment of the disease and its prevention and our government assumes that the nation cannot afford to give these vaccines to all children without realizing that the cost of prevention will be more than repaid, several fold higher, and will be richer if we take disease prevention honestly and seriously.

To accept therapy, one must first accept the presence of the

disease. If problems are denied, solutions will not be accepted. This is exactly what is being done by describing the complications of mumps [1]. In summary, one must view immunization in two ways, one for individual protection by personal prophylaxis and two for public health purpose for control or elimination of an infection. A beginning has to be made and let it be with personal prophylaxis. Presently the only possible course open to us is to immunize all infants whose parents can afford the vaccine till the government learns to spend its fund wisely. Why let our children suffer from diseases that are eminently preventable? It is the (ethical, moral, scientific, epidemiological and economical) duty of the nation to offer this advantage to the adults of tomorrow.

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Reply

Say Yes and No to MMR; 'Theory of Relativity'!!

Dear Editor,

It will clearly take many years of sustained cohort immunization to achieve desired level of artificially induced herd immunity. Meanwhile, prior to this desirable state of affairs, the changes in epidemiological patterns of infection induced by vaccination are not always beneficial. Rubella and mumps are clear examples because of the risk of congenital rubella syndrome (CRS) and the occurrence of orchitis in post-pubertal males. Any level of vaccination coverage will reduce the incidence of infection but by increasing the average age at which those still susceptible acquire infection, certain levels of coverage may increase the incidence of disease. The important question is whether the increase in the proportion of cases in older people will result in an increase in the absolute number of cases of serious disease.

The problem has resulted in the adoption of different vaccination programmes against rubella (to control CRS) in different countries [1]. Until the introduction of MMR vaccine in UK in 1988, only girls were vaccinated at an average age of around 12 years, so as to allow rubella virus to circulate in males and young females and create naturally acquired immunity in the early years. By contrast, it has always been the case in the USA for both boys and girls to be vaccinated around 2 years of age, with the aim of blocking rubella transmission.

Mathematical models predict that the USA policy is best if very high levels of high vaccination (80-85% of each yearly cohort) can be achieved at a young age, while the earlier UK policy is better if this cannot be guaranteed. A mixed policy is predicted to be of additional benefit over the selective policy alone if moderate to high levels of vaccine uptake among boys and girls can be achieved at a young age (>60%) [2]. Data from Finland, show the need to continue schoolgirl vaccination until the cohorts with high level immunity through infant vaccination span the entire high fertility age groups [3].

As for mumps vaccination, during infancy, mathematical models show that there is little benefit to be obtained by vaccination at less than 60%, and indeed vaccination at anything less than 70% coverage is potentially hazardous when considering risk of orchitis. Such a phenomenon is a direct result of the combination of increased age at infection and the risk of complications with age [1]. Though major strides have been made in immunization programmes in our country, only 42% children aged between 12 and 23 months have received all recommended vaccinations [4]. The largest increase in immunization coverage has been for polio vaccination but still 37% of children did not receive the recommended 3 doses. In this scenario introduction of MMR during infancy in our country will be amateurish. The problem is not only lack of finances but the sheer numbers to be covered; not only of cost but cost efficiency and cost benefit. Nothing is absolute; everything is relative.

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