

Choosing Wisely on the use of MMR in patients with egg allergy

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MMR vaccine can be safely administered in primary care to all children with egg allergy¹

Background

Measles

Measles remains a leading cause for preventable infant mortality. It is a viral infection which can be complicated by serious infections such as pneumonia or encephalitis.²

Mumps

Mumps is a viral infection which frequently affects the nervous system.³ It is a leading cause of sensorineural hearing loss, and can also cause orchitis, oophoritis and encephalitis with permanent sequelae in 25% of patients.⁴

Rubella

Rubella is a mild disease. However, maternal rubella infection in early pregnancy can lead to fetal loss; infants may be born with Congenital Rubella Syndrome, which is associated with life-long disability due to deafness, cataracts, cardiac defects and learning difficulties.⁵

Benefits

The Measles, Mumps and Rubella (MMR) vaccine is a weakened live virus vaccine which stimulates the immune system without causing actual infection. It is given in 2 separate doses. The vaccine is around 99% effective against measles and rubella and 88% effective against mumps.

As the measles and mumps vaccines are produced using chicken embryo fibroblasts, there were some concerns that children with egg allergy might develop an allergic reaction. The vaccine however contains only negligible amounts of egg protein (pg - 1ng) which are not sufficient to elicit an allergic reaction.⁶ In three large studies of over 1000 patients with egg allergy, no severe reactions were reported after MMR vaccination.^{7,8,9,10}

Risks

Although the MMR is very safe, like other vaccines, adverse reactions can occur. Following the first dose, fever and/or a rash may develop a week or so after immunization and last two to three days. Adverse reactions are considerably less common after the second dose.¹¹

Anaphylaxis after MMR is extremely rare.¹² Allergy to the MMR vaccine itself can be due to other constituents such as gelatin and neomycin.^{13,14,15}

The MMR vaccine should not be given to those who have had a confirmed anaphylactic reaction to a previous dose of a measles, mumps or rubella containing vaccine, or a systemic reaction to neomycin or gelatin.¹¹ These patients should be referred to an allergy clinic for assessment. MMR should not be given to individuals who are immunosuppressed.

Alternatives

The use of single measles, mumps and rubella vaccines is not recommended. There is no evidence to suggest that single vaccines are any safer than the MMR.¹⁶

Nothing

Without the MMR vaccine, an individual is at risk of developing measles, mumps and rubella and their associated complications.

References

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