Analysis of protective titers of antibodies against circulating measles virus genotypes (H1, B3 and D4) in Iran

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Introduction

Measles is a leading cause of morbidity and mortality in children globally. Despite the accessibility of a promising measles virus (MV) vaccine, measles outbreaks take place even in well vaccinated populations. From all 24 known genotypes of MV, D4, H1 and B3 genotypes have been detected regularly from different regions in Iran. It is necessary to evaluate the protective efficacy of vaccine against currently circulating MV genotypes. A widely accepted standard method for measuring functional neutralizing antibodies is plaque reduction neutralization (PRN) test. Despite of its greater sensitivity, the conventional PRN test is laborious and time-consuming. For this reason, we have developed a microneutralization test to detect virus growth in plates after virus neutralization.

Material & methods

We measured the neutralizing antibody titers against different genotypes of MV, such as H1, D4, B3 and vaccine strain (A) by micro-neutralization assay in 12 children after 2 months of vaccination.

Results

Our results indicated that the vaccine strain had a neutralization activity against H1 and D4 but wasn't competent enough to neutralize B3. In all samples, the neutralization activity against B3, H1, D4 and A was reported 25%, 75%, 67% and 66%, respectively. Another prominent result of our study was demonstration of a marked difference in plaque size by the tested strains. Significant difference between genotype B3 with genotype D4 and marked significant differences with H1 genotype were observed.

Conclusion

The lowest antibody response was observed against genotype B3 and the highest response with negligible differences was observed against genotype H1. Since the size of B3 plaque had no significant differences compared to the vaccine strain, so the diameter of plaque may not be indicative of the pathogenicity of the virus. Even though our study investigated only a limited number of individuals, the data showed more appropriate response of D4 and H1 genotypes to current vaccine. Further molecular studies on the hemagglutinin and fusion proteins of measles virus are required for understanding the reasons of different responses observed against measles vaccine.

Measles and Haemophilus influenza vaccination after pediatric hematopo cell transplantation

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Introduction

Hematopoietic stem cell transplantation (HSCT) has been established marrow diseases. However, the intense chemotherapy performed b severe immunodeficiency so that revaccination of patients after that p have evaluated the adherence of HSCT pediatric patients to measles a type b (Hib) immunization and measles and Hib serum antibody leve

Material & methods

Sixty-five patients who had undergone HSCT after at least three y vaccination cards were checked regarding the number of measles a blood sample was collected. Measles and Hib antibodies were mea Data were analyzed using nonparametric Mann-Whitney and Kr Statistics Software).

Results

The 65 patients (66.2% male; median age at HSCT, 10.3 years; I collection) consisted of 44.6% who had undergone autologou transplantation. One measles vaccine dose was taken by 56.9% o taken the two recommended doses. For Hib vaccine, 83.1% had tak two, and 64.6%, the three recommended doses; 29.2% took one b who had at least one measles dose had significantly higher antibody (1.01 IU/mL versus 0.07 IU/mL; p<0.01). No difference has been with one or two measles vaccine doses (1.01 versus 2.15 UI/mL; three Hib vaccine doses had higher antibody levels than those with t 4.0 µg/mL; p<0.01). There was no significant difference in antil type of HSCT, the presence of cGVHD or not, and whether radiother

Conclusion

Revaccination against measles and Hib is effective and should be p HSCT. The correct follow-up of the guidelines is important, as the high antibody levels.