

### **SEVERE ADVERSE EFFECT OF LIVE MEASLES-RUBELLA (MR) VACCINE ADMINISTERED DURING THE 2008 IMMUNIZATION CAMPAIGN IN BRAZIL**

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In Brazil and many developed countries, active immunization has virtually eliminated rubella. Adverse events associated with rubella vaccine include fever, lymphadenopathy, arthralgia/arthritis, paresthesia and carpal tunnel syndrome, but very rarely encephalitis, Guillain-Barré syndrome (GBS), and acute disseminated encephalomyelitis. We report the occurrence of one fatal case associated with measles-rubella (MR) vaccine. A 31 year-old-man previously in good health was admitted at emergency room complaining of paresthesia and progressive weakness of his lower limbs. The initial diagnosis was GBS. Ten days prior to admission, he was vaccinated with combined MR vaccine. Five days after admission he had cardiorespiratory arrest; he died ten days after the onset of the neurological symptoms. To investigate the viral etiology of the disease, blood, CSF (cerebrospinal fluid), urine and tissue samples (after his death) were collected. Serological tests (IgM) for cytomegalovirus (CMV), measles virus (MV), rubella virus (RV), Epstein-Barr virus (EBV), human herpesvirus 1 and 2 (HHV 1/2), dengue virus and parvovirus B19 were negative but IgG antibodies against MV, HHV1, EBV, RV and parvovirus B19 were positive. Ultracentrifugated CSF submitted to PCR or RT-PCR tests for detection of CMV, EBV, HHV 1/2, varicella-zoster virus, MV and RV was positive only for RV RNA. All samples were inoculated in cell culture for virus isolation and processed by PCR with oligonucleotides specific for RV and MV. RV was amplified in all samples and the sequence RVs/São Paulo02.BRA/08 strain was phylogenetically aligned with RA27/3 vaccine virus but not wild-type virus. Histopathological examination revealed changes consistent with encephalitis and immunohistochemistry enabled identification of E1 RV antigen in brain. In conclusion, we report the presence of RV genome in many organ tissues, viremia, viruria and encephalitis caused by RV vaccine virus that ultimately led to death of a previously healthy man.