

POSITIVE RUBELLA SAMPLE IN BELGIUM AFTER VACCINATION OF 15-MONTH-OLD CHILD

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Abstract (342/350 words):

Belgium has a high vaccination rate for the MMR (measles, mumps and rubella) vaccine (MMR dose 1 96.0%, MMR dose 2 82.6% in 2019). There has been no endemic spread of rubella since at least 2007 and only two imported cases were reported since then. Following WHO guidelines on syndromic surveillance, suspected cases of measles are sequentially being tested for rubella since 2018 to improve quality of the surveillance. This method identified one imported rubella case (as defined by ECDC) in an adult in 2018.

Saliva and nasopharyngeal samples are sent to the National Reference Center (NRC) MMR for primary testing of suspected cases or for confirmation and genotyping. RT PCR is used to test samples for the presence of RNA of rubella virus (RuV) and/or measles virus (MeV). MeV RNA negative samples are sequentially also tested for RuV. MeV positive samples are genotyped at the NRC with Sanger sequencing, while RuV positive samples are genotyped at the WHO Regional Reference Laboratory for measles and rubella in Luxembourg.

In 2022, the screening for RuV in a MeV RNA negative sample yielded a positive result. The patient was a 15-month-old child for which the only available information at time of testing was that it was appropriately vaccinated for its age and had no travel history. Upon further inquiry, it was revealed that symptoms included low-grade fever since a week, cough and loose stool, but no rash nor general malaise. Symptoms started some days after the first dose of MMR vaccine (recommended at 12m, but administered late). A nasopharyngeal swab was taken 9 days post vaccination. Genotyping by sequencing confirmed presence of the vaccine strain.

This is the first reported case where febrile illness in an infant after a first MMR vaccination is associated with RuV but not MeV RNA detection. The case demonstrates the added value of syndromic surveillance and genotyping to ensure there is no endemic rubella circulation in Belgium as required by WHO guidelines. It also highlights the importance of detailed clinical information to be able to correctly interpret lab results.