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Yellow fever vaccine fears

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The vaccine may not be safe for some people

Concern has been raised over the safety of the vaccine for the deadly disease yellow fever following several deaths.

Scientists say research must be carried out to try to understand why some people are highly sensitive to the vaccine.

But they warn that the vaccination programme should be continued unless it becomes clear that considerable numbers are at risk.

Yellow fever, caused by a virus transmitted by mosquitoes, kills up to 50% of its victims. Symptoms include high fever, jaundice, kidney failure, and low blood pressure.

The virus is common in tropical and subtropical Africa and South America. It kills a thousand times more people than the feared Ebola virus.

Vaccine programmes

Vaccination programmes have increased over the past 20 years as the disease has spread to urban areas in these settings. It is also given to protect international travellers.

The vaccine is made from a weakened form of the 17D strain of the virus. It has been regarded as one of the safest virus vaccines, with few side-effects or adverse events.

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Public Health
Laboratory Service

However, The Lancet medical journal contains reports of people from around the world who died after taking the vaccine.

Two deaths were recorded by a team from a specialist World Health Organization centre in Brazil.

In the first case, a five-year-old girl suffered fever, headache and vomiting three days after being given the vaccine. She died after a five day illness.

The second patient - a 22-year-old woman - developed a sore throat and fever, accompanied by headache, muscle pain, nausea, and vomiting four days after vaccination.

She then developed symptoms including jaundice and renal failure, and died after six days of illness.

The cases were similar to a third fatality reported by the South Western Area Pathology Service in Sydney, Australia.

In all three cases the victims demonstrated symptoms of infection by the form of yellow fever virus found in the wild.

Further cases

Three further deaths of elderly patients were recorded by US scientists from the Centres for Disease Control, Atlanta.

In each case the victims suffered from fever, muscle pain, headache and confusion followed by a general deterioration.

However, unlike the cases in South America and Australia, the symptoms pointed to a new post-vaccination syndrome.

Writing in The Lancet, Philippe Marianneau and colleagues from Institut Pasteur, Lyons, France, suggest that the virus strain used in the vaccine may occasionally mutate, either before or after it is administered.

Alternatively, the problem may be that the vaccine triggers an inappropriate immune system response in some people.

They conclude: "The use of 17D vaccination remains highly advisable for people living in or travelling to endemic and epidemic zones.

"However, these three reports raise relevant questions about the mechanisms of attenuation (weakening) of yellow fever virus that should be urgently investigated."

Safe vaccine

A spokesman for the Public Health Laboratory Service said: "The yellow fever vaccine is in fact one of the safest live vaccines.

"It is important to remember that many millions of doses of yellow fever vaccine have been given worldwide over more than 60 years, and the vaccine has an excellent safety record.

"In Brazil 54m doses of the vaccine were given between 1998 and April 2001, and just three of these possible serious adverse events were observed.

"Clearly, if this adverse reaction is indeed prompted by the vaccine, it is extremely rare.

"In contrast to this, the serious consequences of yellow fever disease are well-established.

"It is vital that those who need the vaccine continue to be vaccinated so that they are protected against the disease."

The WHO has called for further research to look at this possible reaction to vaccine, to establish its frequency, and whether particular groups of people are more vulnerable.