

Litchi fruit suspected in mystery illness in India

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A mysterious and sometimes fatal brain disease that has afflicted children in northeastern India for years could be linked to a toxic substance in litchi fruits, US researchers said Thursday.

Investigators say more research is needed to uncover the cause of the illness, which leads to seizures, altered [mental state](#) and death in more than a third of cases.

In the meantime, doctors who encounter sick children should take steps to rapidly correct low blood sugar, which can make the disease more likely to be fatal, said the report by the US Centers for Disease Control and Prevention.

The outbreaks have coincided with the month-long litchi harvesting season in and around the Muzaffarpur district of Bihar state since 1995, said the CDC's *Morbidity and Mortality Weekly Report*.

In 2013, some 133 children were admitted to local hospitals with seizures and neurological symptoms.

Most were aged one to five, and nearly half (44 percent) of them died. Those who died were more than twice as likely as other patients to have been admitted to the hospital with [low blood sugar](#), known as hypoglycemia.

Tests on the spinal fluid of patients came back negative for [infectious](#)

[agents](#) like Japanese encephalitis virus, West Nile virus and other known pathogens in the area.

A study that compared ill children to a control group in the area found that those who got sick were more than twice as likely to have spent time in orchards or agricultural fields.

These findings "raised concern for the possibility of a toxin-mediated illness," said the CDC.

More study in 2014

From the end of May until mid-July last year, 390 children were admitted to the two referral hospitals in Muzaffarpur with illnesses that met the same case definition used in 2013.

"As in previous years, clustering of cases was not observed; the illness of each affected child appeared to be an isolated case in various villages," said the CDC, noting that about 1,000 people lived in each village.

"The number of cases declined significantly after the onset of monsoon rains on June 21, 2014."

Parents and caregivers said the children seemed healthy until they suddenly began experiencing convulsions, usually between 4:00 am and 8:00 am, followed by an altered mental state. Most did not have a fever on admission to the hospital.

Thirty-one percent of the children died.

"The 2013 and 2014 Muzaffarpur investigations indicate that this outbreak illness is an acute noninflammatory encephalopathy," said the CDC.

Component in seeds?

Researchers are carefully looking at a component found in litchi seeds known to cause hypoglycemia in animal studies.

Litchi fruits near the homes of affected children are being tested for the compound, known as methylenecyclopropylglycine (MCPG), and environmental samples are being taken from their homes and water supplies to search for pesticides.

Researchers think MCPG may cause severe hypoglycemia and illness much the same way as a similar toxin, hypoglycin A, which has caused "acute encephalopathy in the West Indies and West Africa after consumption of unripe ackee, a fruit in the same botanical family as litchi," said the CDC.

Outbreaks of neurological illness have also been observed in litchi-growing regions of Bangladesh and Vietnam, "raising further interest in a possible association between litchis and this illness."

An investigation into the Bangladesh cases focused on pesticides used in litchi orchards, but found no specific culprit.

The Vietnam probe looked at "possible infectious agents that might be present seasonally near litchi fruit plantations but found none to explain the outbreak," the CDC said.

Until researchers uncover the cause, parents are urged to seek immediate medical care for their [children](#) if they show symptoms, and doctors should promptly check for [hypoglycemia](#) and correct it as soon as possible.

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