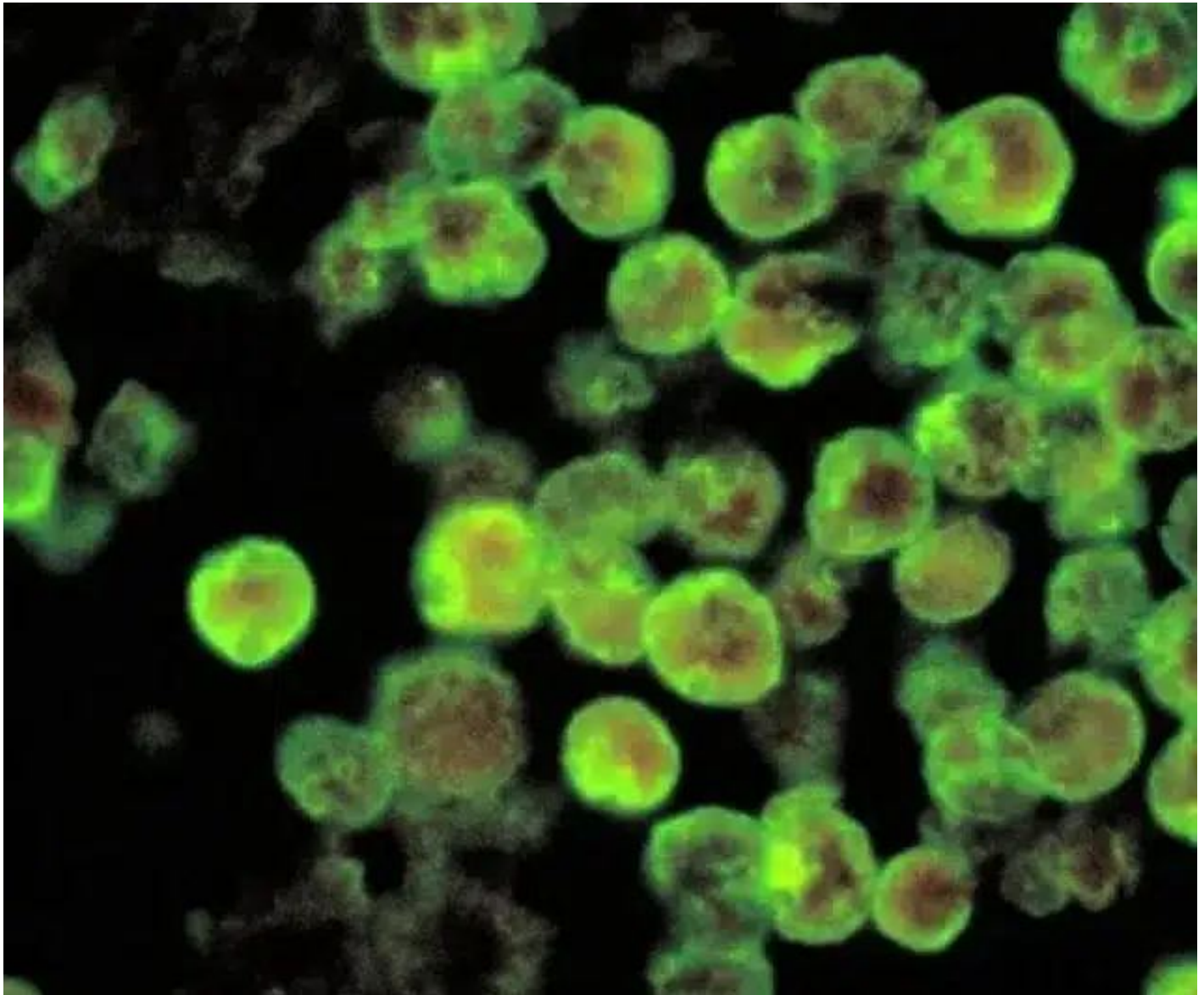


Naegleria fowleri or brain-eating amoeba

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What's in today's article?

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- What is Naegleria fowleri?
- What are the Symptoms of PAM?
- What are the chances of survival?
- What are the Treatment options?
- Prevention measures that a swimmer should consider

Why in News?

A five-year-old girl receiving treatment for a rare brain infection called primary amoebic meningoencephalitis (PAM), caused by the “brain-eating amoeba” *Naegleria fowleri*, has died at the Government Medical College Hospital in Kozhikode.

What is *Naegleria fowleri*?

- About
 - *Naegleria fowleri*, commonly known as “brain-eating amoeba,” is a single-cell organism.
 - It is found in a warm freshwater environment such as lakes, hot springs and even in poorly maintained swimming pools.
 - First discovered in Australia in 1965, it is so small that it can only be seen with a microscope.
 - Only one species of *Naegleria*, *Naegleria fowleri*, infects people.
- **Human infection - process**
 - The amoeba enters the human body through the nose and then travels up to the brain.
 - This can usually happen when someone goes for a swim, or dive or even when they dip their head in a freshwater body.
 - In some cases, it was found that people got infected when they cleaned their nostrils with contaminated water.
 - So far, scientists haven’t found any evidence of the spreading of *Naegleria fowleri* through water vapour or aerosol droplets.
 - Once *Naegleria fowleri* goes to the brain, it destroys brain tissues and causes a dangerous infection known as primary amebic meningoencephalitis (PAM).
- **Non-communicable in nature**
 - *Naegleria fowleri* infection does not spread from person to person, nor does it manifest symptoms when contracted in other forms.
 - The infection is primarily associated with a warm freshwater environment, especially during hot summer months when water temperatures are higher.

What are the Symptoms of PAM?

- As per the US Centers for Disease Control and Prevention (CDC), the first signs of **PAM** start showing within one to 12 days after the infection.
- In the initial stages, they might be similar to symptoms of meningitis, which are headache, nausea and fever.
- In the later stages, one can suffer from a stiff neck, seizures, hallucinations, and even coma.

What are the chances of survival?

- Brain-eating amoeba can be fatal, with a recorded death rate of 97 per cent. The chances of survival from this infection are unfortunately low.

- The infection rapidly destroys brain tissue, leading to inflammation and neurological symptoms such as severe headache, fever, nausea, vomiting, stiff neck, seizures and coma.
- Early diagnosis and prompt initiation of treatment are crucial, but even then, the prognosis remains grim.

What are the Treatment options?

- The US-based Centers for Disease Control (CDC) recommends treatment with a combination of drugs, often including amphotericin B, azithromycin, fluconazole, rifampin, miltefosine, and dexamethasone.
- These drugs have been used to treat patients who survived. Miltefosine is the newest of these drugs.
- It has been shown to kill *Naegleria fowleri* in the laboratory and has been used to treat three survivors.

Prevention measures that a swimmer should consider

- Limit activities in warm fresh water bodies such as lakes, hot springs and ponds unless they are disinfected with chlorine.
 - Use nose protection while swimming or diving, maintain clean swimming pools, follow proper hygiene, washing your hands thoroughly with soap and water before and after water activities, as well as before eating.
 - Use sterile water for nasal cleaning.
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Q.1. What is Centers for Disease Control and Prevention (CDC)?

The Centers for Disease Control and Prevention is the national public health agency of the United States. It is a United States federal agency under the Department of Health and Human Services, and is headquartered in Atlanta, Georgia.

Q.2. What is Amoeba?

Amoeba are single-celled organisms that can change their shape by extending and retracting pseudopods. They are also known as amoeboids and can be found in many types of eukaryotic organisms, including fungi, algae, animals, and protozoa.

Source: What is *Naegleria fowleri* or 'brain-eating amoeba', which led to a 5-year-old girl's death in Kerala? | [Indian Express](#) | [The Hindu](#)

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