

**Naegleria Fowleri — the brain-eating amoeba**

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Madam, with the temperatures soaring again, the incidence of *Naegleria fowleri* is also on the rise. The first case of this year was a 14-year-old boy who was brought in on 10th May and passed away on 16th May 2013.<sup>1</sup>

In a statement issued a week later, the Karachi Water and Sewerage Board (KWSB) said that of the 110 samples collected from throughout the city's water supply and tested in the *Naegleria* monitoring laboratory, 30 reported the chlorine levels were not as per standard.<sup>2</sup> It is therefore safe to assume that this is not the last we will hear of the brain-eating amoeba.

*Naegleria fowleri* an amoeba commonly found in warm, fresh water, and enters the human body nasally, typically infecting people while swimming<sup>3</sup> or more commonly in our set-up, during deep nasal cleansing while performing wudu.

Infection by *N. fowleri* leads to primary amoebic meningoencephalitis (PAM) causing destruction of the brain tissue. Symptoms of PAM start about 5 days (range 1 to 7 days) after infection and mimic those of bacterial meningitis. Headache, fever, nausea, and vomiting are some of the initial symptoms. Later symptoms can include stiff neck, confusion, lack of attention to people and surroundings, loss of balance, seizures, and hallucinations. After the start of symptoms, the disease progresses rapidly and usually causes death within about 5 days (range 1 to 12 days).<sup>3</sup>

Currently, amphotericin B is the agent of choice for the treatment of PAM. However, it is a toxic antibiotic and can cause adverse effects on other organs. Studies are being conducted to check the efficacy of other drugs, including chlorpromazine<sup>4</sup> and corifungin,<sup>5</sup> which have yielded

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promising results so far.

The current dilemma however is differentiating PAM from patients presenting with bacterial meningitis. Cerebrospinal fluid (CSF) analysis in both cases are similar and with time being of the essence while treating PAM, awaiting results of other tests like immunohistochemistry and polymerase chain reaction (PCR) are out of the question. It would be prudent therefore, to take a thorough history from the patient, including recent water-based activities and details of performance of wudu. If a history is suggestive of PAM, a simpler method for diagnosis would be to visualise the motile amoeba in a fresh, non-refrigerated sample of CSF under a microscope or stain with Giemsa-Wright stain or the modified trichrome stain.

However since prevention is better than cure all patients should be counseled to use water that has been previously boiled for 1 minute and left to cool or filtered water while making a solution for irrigating, flushing, or rinsing their sinuses.<sup>3</sup>

**References**

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