Rhino-orbito-cerebral mucormycosis in a child with diabetic ketoacidosis

Sir,

We read the article "Rhino-orbito-cerebral mucormycosis in a child with diabetic ketoacidosis (DKA)" by Kumar *et al*.[1] with interest. The author reported a 9-year-old girl with DKA and rhino-orbito-cerebral mucormycosis. We want to highlight certain issues regarding diagnosis and management of this child.

The child was diagnosed with rhino-orbital-cerebral mucormycosis after 48 h of admission. Her initial computed tomography (CT) brain was found to be normal. It is not clear whether the CT brain was plain or contrast enhanced. We can understand due to sickness of the child, CT may have been preferred over magnetic resonance imaging (MRI). However in a clinical scenario where cerebral invasion is suspected along with rhinosinusitis, MRI is preferred over CT scan. Contrast enhanced T1-weighed images are helpful in delineating intracranial spread and identifying invasion of cavernous portion of internal carotid artery.[2,3] The sensitivity of initial CT and MRI in detecting sinusitis is 97% and 100% respectively. However, initial MRI is more sensitive in detecting disease beyond sinuses like extension to orbits, cranium.[4] Since, she developed ophthalmoplegia at 72 h of admission, cavernous sinus thrombosis should be strongly suspected. Involvement of brain stem could not be ruled out as she had right facial palsy with left hemiparesis.

Authors have mentioned amphotericin B as the treatment of choice in mucormycosis, but the current literature suggests that combination antifungal therapy is better than monotherapy in mucormycosis. Reed *et al*. concluded from a retrospective study that combination of caspofungin-polyene therapy is superior to polyene monotherapy.[4] Addition of echinocandins to polyenes increases the efficiency of polyenes by following mechanisms:

- Disruption of β glucan linking on the cell wall of *Rhizopus* resulting in better delivery of polyenes
- Altered virulence of fungus by stunting filamentation or altering cell wall contents
- Enhanced host response to the fungus.

The authors have reported mortality of 40% and 10% in mucormycosis with and without cerebral involvement. However, a systematic review showed that children with cerebral, gastrointestinal, disseminated, and cutaneous mucormycosis had mortality of 100%, 100%, 88%, and 0% respectively.[5]

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References

1. Kumar MM, Poovazhagi V, Anbalagan S, Devasena N. Rhino-orbito-cerebral mucormycosis in a child with diabetic ketoacidosis. Indian J Crit Care Med 2014;18:334-5.
2. Herrera DA, Dublin AB, Ormsby EL, Aminpour S, Howell LP. Imaging findings of rhinocerebral mucormycosis. Skull Base 2009;19:117-25.
3. Mohindra S, Mohindra S, Gupta R, Bakshi J, Gupta SK. Rhinocerebral mucormycosis: The disease spectrum in 27 patients. Mycoses 2007;50:290-6.

4. Reed C, Bryant R, Ibrahim AS, Edwards J Jr, Filler SG, Goldberg R, *et al.* Combination polyene-caspofungin treatment of rhino-orbital-cerebral mucormycosis. Clin Infect Dis 2008;47:364-71.
5. Zaoutis TE, Roilides E, Chiou CC, Buchanan WL, Knudsen TA, Sarkisova TA, *et al.* Zygomycosis in children: A systematic review and analysis of reported cases. Pediatr Infect Dis J 2007;26:723-7.

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