Is it really a study of community-acquired bacterial infections?

Dear Editor,

I read the article by Bharathi et al. with interest.[1] I wish to point out the following observations.

1. The authors have titled their study as “Etiology and antibacterial susceptibility pattern of community-acquired bacterial ocular infections in a tertiary eye care hospital in South India.” However, they have not mentioned any inclusion or exclusion criteria in their study to diagnose “community-acquired” bacterial ocular infection. Community-acquired infection is an infection that was present or incubating at the time of hospitalization and was not caused by an organism acquired during previous health care. [2] Centre for Disease Control has laid down the
criteria for diagnosis of community-acquired methicillin-resistant *Staphylococcus aureus* (CA-MRSA) infection [Table 1].[^2] Community-acquired infections are commonly caused by *Staphylococcus aureus*, *Streptococcus pneumoniae*, *Escherichia coli*, *Klebsiella* and *Proteus*. This criterion can be applied for any species of bacteria or in general bacterial infection. This study was done at a tertiary eye care hospital; therefore, there is large number of referred patients who had been already treated in the past in health care settings elsewhere. Patients treated elsewhere in the past are not fulfilling the above criterion. Community-acquired infection is different from hospital-acquired infection in terms of epidemiology, antibiotic sensitivity patterns, virulence, clinical presentation, and treatment.[^2]

2. The authors have not mentioned about the method of specimen collection in orbital cellulitis patients. Positive culture yield in their study was 42.9% (9 out of 21). Liu *et al.* reported 74% positive local culture yield in their study.[^3] I feel this low positive culture yield may be due to the incorrect selection of site/method of specimen collection. Sinusitis is the most common cause of orbital cellulitis in adult population. The ethmoidal sinus is the most frequently involved sinus in orbital cellulitis secondary to sinusitis. There are multiple factors for the spread of ethmoidal sinus infection to orbit, such as close proximity, very thin medial wall of orbit, various foramina in medial wall for neurovascular bundles and natural dehiscence in lamina papyracea. Therefore, collection of discharge from the inferior meatus of the nose is crucial for culture of pathogenic organisms in orbital cellulitis.

3. A part of this study was also published in the past.[^4] There are few disparities in these two similar studies conducted by the same ophthalmic center. In the present study, the authors mentioned the total number of orbital cellulitis cases over a period of 6 years to be 21. On other hand, a part of the study published elsewhere shows the number of orbital cellulitis cases in a single year to be nil [Table 2].[^5] The authors should explain why this disparity has developed.

**Table 1: Criteria for probable diagnosis of infection caused by the community–acquired methicillin-resistant *Staphylococcus aureus***

| Criteria                                                                 |
|-------------------------------------------------------------------------|
| Diagnosis of MRSA was made in the outpatient setting or by a culture positive for MRSA within 48 hours of admission to the hospital |
| The patient has no past medical history of MRSA infection or colonization |
| No medical history in the past year of:                                 |
| ° Hospitalization                                                       |
| ° Admission to a nursing home, skilled nursing facility, or hospice     |
| ° Dialysis                                                              |
| ° Surgery                                                               |
| No permanent indwelling catheters or medical devices that pass through the skin into the body |

**Table 2: Orbital and ocular adenexal infection in the present study and previously published study**

| Study                        | Blepharitis | Hordeolum | Preseptal cellulitis | Dacryocystitis | Canaliculitis | Orbital cellulitis | Lacrimal abscess |
|-----------------------------|-------------|-----------|----------------------|----------------|---------------|--------------------|-----------------|
| Present study[^5] (Total 1829) | 530         | 190       | 31                   | 930            | 111           | 21                 | 16              |
| Part of study[^5] (Total 318) | 96          | 55        | 3                    | 136            | 28            | -                  | -               |

**References**

1. Bharathi MJ, Ramakrishnan R, Shivakumar C, Meenakshi R, Lionalraj D. Etiology and antibacterial susceptibility pattern of community-acquired bacterial ocular infections in a tertiary eye care hospital in south India. Indian J Ophthalmol 2010;58:947-507.

2. Salgado CD, Farr BM, Calfee DP. Community-acquired methicillin-resistant *Staphylococcus aureus*: A meta-analysis of prevalence and risk factors. Clin Infect Dis 2003;36:131-9.

3. Liu IT, Kao SC, Wang AG, Tsai CC, Liang CK, Hsu WM. Preseptal and orbital cellulitis: A 10-year review of hospitalized patients. J Chin Med Assoc 2006;69:415-22.

4. D'Souza N, Rodrigues C, Mehta A. Molecular characterization of methicillin-resistant *Staphylococcus aureus* with emergence of epidemic clones of sequence type (ST) 22 and ST 772 in Mumbai, India. J Clin Microbiol 2010;48:1806-11.

5. Ramesh S, Ramakrishnan R, Bharathi MJ, Amuthan M, Viswanathan S. Prevalence of bacterial pathogens causing ocular infections in South India. Indian J Pathol Microbiol 2010;53:281-6.