

# Cysticercosis and Japanese Encephalitis

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Dear Editor,

The recent report on cysticercosis and Japanese Encephalitis (JE) is very interesting [1]. According to a hospital-based study, Patgiri et al., concluded that “the study proves that the association of Cysticercosis and JE holds true in this region [1]”. The interesting consideration might only be an accidental finding. Patgiri et al., could not demonstrate that the seropositivity is relating to the high prevalence of both diseases in the studied area or not. In any tropical country, the high rate of seropositivity towards several tropical infections among the local people can be expected. In an area with lack for good sanitation, local people can be at risk for cysticercosis, JE and other diseases without any relationship among the mentioned diseases [2]. The accidental concurrent infections between cysticercosis and JE can also be seen [3]. It is usually a simple case of new JE infection in a case with previous silent neurocysticercosis. The present study lacked patients without Acute Encephalitis Syndrome, who could have been better controls; if existed, the exact association and biological process could have been studied.

## REFERENCES

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## Authors' Reply

I would like to put forward the following pertinent remarks as a point-to-point justification of the issues raised by the author of this letter:

1. The interesting consideration is the finding might be only an accidental finding.

**Clarification** - The difference in the Seroprevalence of cysticercosis amongst JE positive and JE negative cases (3.7% vs 14.6%,  $p=0.0019$ ) which was found to be statistically significant, cannot be described as an accidental finding.

2. Patgiri et al., could not demonstrate that the seropositivity is relating to the high prevalence of both diseases in the studied area or not.

**Clarification** - Since the current study is purely a hospital based retrospective study, no attempt was made to study the prevalence of JE or cysticercosis in the region. This would call for a community based survey, which was beyond the scope of the present study.

3. In an area with lack for good sanitation, the local people can be at risk for cysticercosis, JE and other diseases without any relationship among the mentioned diseases.

**Clarification** - The seroprevalence of IgG antibodies to in JE positive patients has been shown to be significantly higher as compared to JE negative patients who are from a geographically similar region and have a more or less similar socio-economic status. This would compensate for possible confounders like sanitation.

4. The present study lacked for the study in patients without Acute Encephalitis Syndrome (AES), who can be the better controls.

**Clarification** - The authors agree that non-AES cases can also be taken as controls. But that would also call for a community based study to include age and sex matched controls, which is beyond the scope of the present study. The authors have thereby included non-JE AES cases which represent a demographically similar study population.

## CONCLUDING REMARKS

While establishing a relationship between two conditions or two diseases, one must take into consideration the biological plausibility between the two. Although JE and cysticercosis share quite a few socio-demographic and ecological factors such as pig rearing in rural areas, unhygienic conditions leading to a higher rate of intestinal parasitic infestations and consequently malnutrition, the biological plausibility of cysticercosis predisposing an individual to subsequent JE infection is very high [1]. It has been shown in both national and international studies that cerebral Cysticercosis compromises the blood-brain barrier and facilitates the entry of the JE virus into the brain, leading to fulminant infection [2-4]. It may be noteworthy here to put forward the concluding remarks of the study by Desai et al., carried out at NIMHANS [1], Bangalore in 1990-91 which states that “Irrespective of the mechanism, it appears that the association of cerebral cysticercosis in JE patients is more than a chance coincidence”. The authors in our study have demonstrated that this finding is relevant even in a JE endemic area like Upper Assam.

## REFERENCES

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