Plasma and CSF Beta-Endorphin levels show a strong correlation in children with cerebral malaria

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ABSTRACT:

AIM: Beta-endorphin is an endogenous neuropeptide found in the plasma and cerebrospinal fluid (CSF) of humans but there have been varying reports of the relationship between the plasma and CSF levels in different clinical conditions. However, the relationship between β-endorphin levels in the plasma and CSF of children with cerebral malaria has not been reported. Thus, we set out to determine the relationship between β-endorphin levels in the CSF and plasma of children with cerebral malaria.

METHODS: In this study conducted on forty Nigerian children admitted with the diagnosis of cerebral malaria, one millilitre each of venous blood and CSF obtained from the subjects was used for the determination of β-endorphin levels.

RESULTS: The plasma β-endorphin levels significantly correlated positively with CSF β-endorphin ($r = 0.568$, $p = 0.001$) such that for every unit rise in plasma β-endorphin, CSF β-endorphin rises by 0.252 pmol/ L (Confidence interval 0.132 to 0.371 pmol/ L).

CONCLUSION: The finding of positive correlation between plasma and CSF β-endorphin levels in this study may suggest a possible communication between the plasma and CSF in cerebral

malaria probably from the disruption of the blood-brain barrier which has been reported in cerebral malaria.

What this paper adds:

- In cerebral malaria, CSF β-endorphin levels rises as the plasma β-endorphin levels increases.
- The positive correlation between plasma and CSF β-endorphin levels in this study may suggest a possible communication between the plasma and CSF in cerebral malaria due to disruption of the blood-brain barrier (BBB).
- It may suffice to analyse plasma β-endorphin levels only in studies on children with CM where repeated lumbar punctures may be unethical.