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## Treg cells regulates antibody response to Japanese encephalitis vaccination

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Japanese encephalitis (JE) is the most common arthropod-borne human encephalitis in the world. Vaccination is the most effective countermeasure for protecting individuals from Japanese encephalitis virus (JEV) infection. Despite the introduction of live attenuated SA14-14-2 JE vaccine, an increased number of AES (Acute Encephalitis Syndrome) cases have been reported in India, including Uttar Pradesh, and the disease has spread to new districts, urban areas, and villages. Neutralizing antibodies and its persistence after JEV vaccination is considered as important correlate of protection following JEV infection. However vaccine-mediated immunity is often multifactorial and the best protection is likely to be elicited by the combination of strong humoral and cell-mediated immune responses. Despite the excessive research covering the humoral response after Japanese encephalitis infection or vaccination, role played by cellular immunity is largely unknown. To understand this, we have done a lymphocyte subset analysis in live attenuated SA-14-14-2 Japanese encephalitis vaccine recipients of JE endemic area of Uttar Pradesh and we reported that Treg cells were found to be significantly higher (P<0.01) in vaccine non-responder group as compared to high antibody titer group suggesting expansion of Treg cells may regulate antibody generation after Japanese encephalitis vaccination. Therefore, our study will be helpful in indicating cellular aspects of JE vaccination and will also add to existing knowledge and contributes to designing of an improved vaccine against Japanese encephalitis.

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