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The role of ultra-diluted belladonna compound in the immune mediated clearance of je virus infection in mice model

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Objective: Japanese encephalitis (JE) is the most important cause of acute and epidemic viral encephalitis. To date, there is no antiviral drug effective against JE. A study was conducted to find out the underlying protective mechanism of Belledonna-200 in the clearance of JE virus infection in experimental mice model.

Methods: Mice, divided into two groups (control and experimental) were challenged intra-cerebrally with 0.02ml of JE-viral dilution (LD50 dose) each. On 3rd day the mice in the experimental group were treated orally with two doses of 0.06 mL of Belladonna-200 diluted in distilled water one hour apart. The mice were then observed daily for signs of sickness, recovery or death.

The mice that survived the JE virus infection in both control and experimental groups were sacrificed 10 days after virus inoculation and their brains were collected aseptically using standard procedures. The brains were immediately preserved in -80°C Deep freezer. RNA extraction was done from the mice brain as per standard Procedure. Real Time RT PCR were done for JE viral load studies and m-RNA expression of CCR-5, IFN-β, IL-6, TLR-3 and TLR-7 in both the control and experimental groups.

Result: Survival rate of mice in the control group was 52.7 % whereas that in the experimental group 72.2% (x2 value significant at 0.0005 level). The JE viral load in the experimental group was significantly lower than in the control group. There was significant up-regulation of the m-RNA expression of CCR-5 chemokine receptor, TLR-7, IFN – β and IL-6 in the experimental group as compared to that of the controls. TLR-3 however remained unchanged in the control and experimental groups.

Conclusion: Belladonna-200 possibly clears JE-virus infection by immune mediated mechanisms.

Biography

Bhaswati Bandyopadhyay is a Medical professional and is working as Associate Professor in the Virology Unit of School of Tropical Medicine, Kolkata, India since 2007. She is MBBS & MD in Microbiology. She is keenly interested in Arboviral research work. She is also a master-trainer of HIV–AIDS in India. She has published 18 papers in reputed journals and books. She is also an Art of Living Devotee.

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