

JOINT EVENT

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Stimulation of immune response by immunotherapy with phage lysate of *B. abortus* in brucellosis affected cattle**Sugandha Raj and Hari Mohan Saxena**

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Brucellosis is an important zoonotic disease causing huge economic losses and sufferings. Currently there is no satisfactory therapy for bovine brucellosis. We explored the immunotherapeutic potential of bacteriophage lysed *Brucella* organisms (phage lysates) prepared by lysing organisms of *Brucella abortus* strains S19 and RB51 with a lytic brucellaphage. After successful sterility and safety testing, the lysates were injected 2 ml subcutaneously once in brucellosis affected cattle. In group I, S19 lysate alone (SL) and in group II, RB51 lysate alone (RL) were injected, group III animals received a cocktail lysate (CL) comprising both S19 and RB51 lysates while group IV animals were left untreated as control. In SL cattle, the increase in mean anti-*Brucella* antibody titers between 0D and 90D was very significant ($P < 0.01$). In RL animals, the differences among the mean titers at different intervals were non-significant. In CL cattle, the increase in the titers from 0 day to 90 day was very significant ($P < 0.01$). In brucellosis affected untreated (control) cattle, the variation in the titers at various intervals was not significant. In SL cattle, the leukocyte counts increased very significantly ($P < 0.01$) from 0 day to 90 day post immunization. In RL cattle, there was no significant difference in the total leukocyte counts at various intervals. In CL animals, the increase in the mean leukocyte count from 30 D to 90 D was very significant ($P < 0.01$). In RL cattle, the increase in lymphocyte counts from 0 day to 90 day was very significant ($P < 0.01$). In SL cattle, increase in neutrophil count from 0 to 90 day was very significant ($P < 0.01$). Thus, S19 lysate favored antibody and phagocytic response while RB51 lysate promoted cellular immunity in brucellosis affected cattle.

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