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Risk factors assessment and detection of Japanese encephalitis circulating antibodies in pig, duck and human of Chitwan district, Nepal

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To study on risk factors associated with Japanese Encephalitis (JE) and detection of JE circulating antibodies in pig, duck and human. A cross-sectional study was carried out from November 2015 to April 2016 in Chitwan district of Nepal. A set of questionnaires was developed, pre-tested in Chitwan district and then survey was carried out. A total of 99 pig blood samples, 102 duck blood sample and 100 human blood samples were collected. JE circulating antibodies IgG in pig and duck and IgM in human were detected from JEV ELISA kit. The data were collected, coded, computed and analyzed by Epi Info7 and MS-EXCEL 2013. Chi-square and Fisher extract test was used to find out the association of risk factors. The study showed that 8.08% (8/99) of pig serum samples and 5.88% (6/102) of duck serum samples were positive to JE circulating IgG antibodies. In case of human, out of 100 serum samples 100% (100/100) were negative for JE circulating IgM antibodies. There was no significant difference ($p>0.05$) in the seropositivity of JE circulating antibodies in pig and duck according to age, sex, breed, proximity of pig/duck farm to rice/paddy field, water sources and exposure to wild birds. Mosquito avoiding practices were significantly associated with occurrence of JE ($\chi 2=9.95$; $p<0.05$). Out of 100 respondents 38.18% (21/55) of female and 35.56% (16/45) of male; 21.62% (8/37) of less than 15 years; 46.03% (29/63) of more than 15 years; 12.50% (4/32) of the illiterate and 48.53% (33/68) of the literate heard about JE. The research showed that absence of mosquito avoiding practices are significantly related to occurrence of JE. However, risk of JE occurrence can be minimized through mosquito avoiding practices.

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