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Student awareness of Ebola virus outbreak: Mansoura University field study

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Background: Ebola is a hemorrhagic disease of humans caused by Ebola viruses ongoing in several West African countries.

Aims: To evaluate the current level of knowledge of Ebola virus and to raise community awareness of the risk factors for Ebola infection among medical and para-medical students given that healthcare workers have been especially vulnerable.

Method: This was a field study carried in the campus of University of Mansoura, Egypt. A stand has been divided into 3 stations: A pre-survey, an awareness station and a post-survey. The questionnaire addressed basic facts about Ebola virus and how to prevent it, its route of transmission, risk of morbidity and mortality, treatments available and countries afflicted.

Results: Out of the 1515 peoples participating in the survey there were 703 females and 812 males. A total of 1336 were medical students. 754 said they had heard about Ebola. The internet was the most common source of knowledge about Ebola, as 1273 students stated it as first choice with TV coming in second with 242 students. Most were met with the answer 'I don't know' in the pre-survey. In the post-survey after a 10 minutes general awareness session about the Ebola virus, 1470 surveyors agreed that Ebola has currently no effective treatment and leads to death. Moreover, after the quick awareness 1491 surveyors answered positively to the question 'Is Ebola preventable?'

Conclusion: Involving community especially medical students and healthcare workers in treatment and prevention of Ebola through providing adequate means of awareness and assessment is crucial in limiting its consequences.

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Vaccination with recombinant 4×M2e.HSP70c fusion protein as a universal vaccine candidate enhances both humoral and cell-mediated immune responses and decreases viral shedding against experimental challenge of H9N2 influenza in chickens

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As cellular immunity is essential for virus clearance, it is commonly accepted that no adequate cellular immunity is achieved by all available inactivated HA-based influenza vaccines. Thus, an improved influenza vaccine to induce both humoral and cell-mediated immune responses is urgently required to control LPAI H9N2 outbreaks in poultry farms. M2e-based vaccines have been suggested and developed as a new generation of universal vaccine candidate against influenza A infection. Our previous study have shown that a prime-boost administration of recombinant 4×M2e.HSP70c (r4M2e/H70c) fusion protein compared to conventional HA-based influenza vaccines provided full protection against lethal dose of influenza A viruses in mice. In the present study, the immunogenicity and protective efficacy of (r4M2e/H70c) was examined in chickens. The data reported herein show that protection against H9N2 viral challenge was significantly increased in chickens by injection of r4M2e/H70c compared with injection of conventional HA-based influenza vaccine adjuvanted with MF59 or recombinant 4×M2e (r4M2e) without HSP70c. Oropharyngeal and cloacal shedding of the virus was detected in all of the r4M2e/H70c vaccinated birds at 2 days after challenge, but the titer was low and decreased rapidly to reach undetectable levels at 7 days after challenge. This protective immunity might be attributed to enhanced cell-mediated immunity, which is interpreted as increased lymphocytes proliferation, increased levels of Th1-type (IFN- γ) and Th2-type (IL-4) cytokines production and increased CD4⁺ to CD8⁺ ratios, resulting from the injection of four tandem repeats of the ectodomain of the conserved influenza matrix protein M2 (4×M2e) genetically fused to C-terminus of Mycobacterium tuberculosis HSP70 (mHSP70c).

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