EXPERIMENTAL TREATMENT OF ORAL LESIONS OF FOOT AND MOUTH DISEASE WITH VINEGAR AND CONCENTRATED EXTRACT OF POMEGRANATE

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Foot and Mouth Disease (FMD) is associated with an aphthovirus. FMD affects all cloven-footed animals and is endemic in many parts of the world. The morbidity rate in outbreaks of FMD in susceptible animals can rapidly approach 100%; however, the case fatality is generally very low. The virus is widely disseminated to many epidermal sites, but gross lesions develop only in areas subjected to mechanical trauma such as the epithelium of the mouth and tongue. The common clinical signs are fever, serous nasal discharge, salivation and buccal lesions in 75% and foot lesions in 25 % of cases. Therefore the treatment of oral lesion can be important in shortening the course of the disease and its final outcome. Treatment for FMD is symptomatic with mild disinfectant and protective dressings to inflamed areas to prevent secondary infection; these treatments are recommended in endemic countries where a slaughter policy is not in force. In the recent FMD epidemic in Iran, in April 2010, a high number of affected animals were referred to Veterinary Clinic of Shiraz University. The affected animals were randomly divided into 3 groups (each consisted of 15 animals). Group 1 treated with injection of flunixin meglumine (%5, 1.1 mg/kg) and broad spectrum antibiotics (Oxytetracycline 10%, 10 mg/kg). Group 2 received the same treatment plus local application of the vinegar (pH=2.4) on oral lesions. Group 3 received the same treatment for group 1 plus local application of the concentrated extract of pomegranate (%40) for treatment of oral lesions. Treatments were continued for at least 5 days. Monitoring the healing process of the oral lesions showed significantly a more rapid healing of oral lesions in vinegar and concentrated extract of pomegranate. The study showed that the local using of either vinegar and concentrated extract of pomegranate is superior to the group 1 (p< 0.05). Although a better response was seen in application of concentrated extract of pomegranate, the effects were not significant when compared to vinegar. It seems that the use of these two compounds (concentrated extract of pomegranate and vinegar) have a direct effect on lowering virus concentration in oral epithelium and in the case of concentrated extract of pomegranate an extra effect of antioxidant activity may be responsible for its better effect.

Keywords: Foot and Mouth Disease, oral lesions, vinegar, concentrated extract of pomegranate