Title: The evaluation of asthma control after the March 11, 2011 complex disaster of earthquake, tsunami, and nuclear power plant accident

Body: Background; The Great East Japan Earthquake and tsunami on March 11, 2011, resulted in the Fukushima nuclear power plant accident, which consequently led to a massive emission of radioactive substances. This matchless complex disaster is presumed to have had a huge impact on asthmatics. Objectives; We evaluated the physical and psychological status of asthmatics until one year later after the disaster. Methods; Seventy asthmatics were enrolled and performed a questionnaire about the disaster just after and one year later. Results; Six patients could not continue inhaled corticosteroids (ICS) by the loss of medicine. In these 6 patients, four patients (66.7%) had an asthmatic attack just after that the disaster. On the other hand, an asthmatic attack was caused only in ten patients in 64 patients (15.6%, p<0.0001) that could continue ICS. In ICS continued group, the asthma symptoms and control score were significantly lower in anxiety (+) group compared to anxiety (-) group (p<0.05). In the examination of the 58 patients that performed a questionnaire one year later, 29 patients felt an anxiety for the disaster at that time. In such patients, there was a weak correlation between anxiety for the disaster and control of asthma. In the examination through the whole one year, 27 patients have continuously felt anxiety, but only 8 patients were aware of deterioration of asthma control. Conclusions; Patients can maintain a good asthma control by continuation of ICS even just after the disaster. In addition, long term psychological support seems to be important to reduce anxiety and keep good asthma control.