

## Poster-discussion: Respiratory effects 2

### P175 RESPIRATORY SYMPTOMS AND EFFECTS OF SO<sub>2</sub>: 4-YEAR FOLLOW UP OF MIYAKEJIMA RESIDENTS AFTER RETURNING TO THE ISLAND

Satoko Iwasawa,<sup>1</sup> Takeshi Kochi,<sup>1</sup> Makiko Nakano,<sup>1</sup> Takehiro Michikawa,<sup>1</sup> Takamoto Uemura,<sup>2</sup> Tazuru Tsuboi,<sup>1</sup> Mutsuko Yamada,<sup>1</sup> Shigeru Tanaka,<sup>3</sup> Kazuyuki Omae<sup>1</sup> <sup>1</sup>*Keio University, Tokyo, Japan;* <sup>2</sup>*Kyorin University, Tokyo, Japan;* <sup>3</sup>*Jumonji University, Tokyo, Japan*

10.1136/oemed-2011-100382.389

**Objectives and methods** Mt. Oyama in Miyakejima Island, Tokyo, erupted in June, 2000. All Miyake village citizens were forced to evacuate from the island in September, 2000, due to continuous eruptions and emissions of unsafe amounts of volcanic gas, mainly SO<sub>2</sub>. The study population comprised 525 adults (195 male, 330 female) who each underwent two health examinations for respiratory health just before returning the island (2004) and 4 years after return (2008). Exposure was approximated by monitoring data across 7 monitoring stations. Mean SO<sub>2</sub> concentration from February 2005 to November 2008 was 0.022 ppm. According to a 56-month average of the 5-min mean SO<sub>2</sub> concentration, we categorised the four inhabited areas into one low-, 2 middle- and one high-concentration areas. Effect was evaluated by a questionnaire for respiratory symptoms. We defined chronic obstructive lung disorders as having cough and phlegm on most days for at least 3 months in each year.

**Results** Arithmetic means of the 5-min average SO<sub>2</sub> concentration (ppm) in the past 54 months were 0.005 for low-, 0.022 and 0.024 for middle-, and 0.036 for high-concentration areas. The prevalences of "sore throat", "skin irritation" and "nasal irritations" were significantly higher in the high- and one of the two middle-SO<sub>2</sub> areas compared to the low-SO<sub>2</sub> area. However, the prevalence of chronic bronchitis-like symptoms among normosusceptive citizens in 2008 was 2.0% which was lower than that of 3.3% in 2004.

**Conclusions** SO<sub>2</sub> exposure-dependent respiratory symptoms were observed in adult Miyakejima citizens after returning to the island.