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**Reply to the letter “Fractional inspired oxygen on transport ventilators: an important determinant of volume delivery during assist control ventilation with high resistive load”**

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Sir: Breton et al. have extended the discussion about the results of our bench study on portable ventilators [1]. They have provided additional explanations about the inability of the portable ventilators to deliver the set tidal volume adequately when resis-

tance of the respiratory system has markedly changed. Their first explanation, i.e. absence of compensation for gas compression inside the ventilator circuit, was already mentioned in our original report. It should be noted that the compliance of the circuit actually measured in our study (Table 1 in reference 1) was much lower than the value of 3 ml/cmH<sub>2</sub>O taken as an example by Breton et al. Therefore, the kind of circuit is also of significance.

The second explanation is related to the limitation of the Venturi device to deliver inspiratory flow when FIO<sub>2</sub> is 60% as compared to 100%. This is a very good point. All measurements have been performed, as mentioned in our report, at 60% FIO<sub>2</sub>: a condition prone to enhance the limitations of the Venturi device. In our study, however, at the tidal volume of 300 ml, i.e. that provided on the figure of Breton et al., differences among the non-ICU ventilators were actually observed. For each mechanical condition, including that with the highest resistance of 50 ml/cmH<sub>2</sub>O per s, the set tidal volume was adequately delivered by Oxylog 1000, Oxylog 2000 and AXR

1a ventilators; this was not the case with Osiris 1 and Osiris 2 ventilators. In fact, the picture depicted by Breton et al. was achieved at higher tidal volumes, and particularly at 800 ml, with all the non-ICU ventilators except Oxylog 1000, which remained reliable. Some differences in the capability to deliver inspiratory flow may exist among Venturi devices.

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**Reference**

1. Zanetta G, Robert D, Guérin C (2002) Evaluation of ventilators used during transport of ICU patients—a bench study. *Intensive Care Med* 28:443–451

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