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Title: Smoking status and respiratory infections during mechanical ventilation

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Body: Background: Smoking is associated with an increased risk of pulmonary infections. However, little is known about smoking history and respiratory infections during mechanical ventilation. Objectives: To assess smoking status in ventilator-associated respiratory infections. Methods: Preliminary data from the multicentric prospective BioVent study, investigating mechanically ventilated critical ill patients, were analysed. Responsible intensivists evaluated the presence of a respiratory infection. Respiratory infections during mechanical ventilation, from 48 hours after start up to 14 days, were assessed. Results: Out of 173 mechanically ventilated patients (mean age 62 ± 16 years; mean duration of mechanical ventilation 8 ± 10 days) 45 patients (26%) never smoked, 61 patients (39%) stopped smoking more than one month before mechanical ventilation and 67 patients (35%) smoked until the month before mechanical ventilation. The time to first respiratory infection was shorter in current smokers as compared to never smokers (p = 0.042) and shorter in former smokers as in never smokers (p = 0.002; figure). There was no difference between current and former smokers (p = 0.30). In cox regression the smoking status was associated with

respiratory infection, independent of age, gender, COPD and duration of mechanical ventilation.

Conclusions: A smoking history probably increases the risk of respiratory infections during mechanical ventilation.