

Press Release

No. 52e / October 12, 2009

Page 1 / 2

Ceremonious presentation of Bernhard Dräger Award 2009

Vienna – The European Society for Intensive Care Medicine (ESICM) has awarded the "Bernhard Dräger Award for Advanced Treatment of Acute Respiratory Failure", which is worth €15,000, at the beginning of their annual conference. This year's winner is Dr Vasilios Papaioannou from the Democritus University of Thrace in Alexandroupoli (Greece).

The award-winner accepted the prize during the opening of the conference in the Austria Center in Vienna. Prof. Dr. Rui Moreno, President of the ESICM and Dr. Daniel de Backer, Chairman of the ESICM research committee awarded the prize together with Sebastian Kässner, Head of the strategic business field Respiratory Care at Dräger. Dräger, Germany, is the sponsor of the prize.

Award distinguishes studies of respiratory distress

With the donated prize money, the award supports studies for the advanced treatment of acute respiratory insufficiency. The award-winner Vasilios Papaioannou evaluates the hypothesis that it is possible to estimate when a patient requires weaning from the ventilator by analyzing the parameters of heart rate and breath-to-breath variability in his study "Investigation of Cardiorespiratory Coupling, Heart Rate and Breath-to-Breath Variability for Weaning Outcome Assessment in Mechanical Ventilated Patients". Since summer 2009, the study has been completed on at least 30 patients.

"This study investigates cardiorespiratory variables which are already easily available under an innovative approach", Daniel de Backer explains the award. "This study should help to identify reliable indicators to better guide the weaning process, this would be significant for clinical practice." The basis of Papaioannou's examination is the realization that heart rate and breath-to-breath variability are subject to a natural variability and that the two factors are connected.

Variability is an indication of healthy organisms

Studies show that all healthy biological systems are subject to a certain

Contact

Corporate Communications:
Burkard Dillig
Tel +49 451 882-2185
burkard.dillig@draeger.com

Trade press:
Malte Blombach
Tel +49 451 882-1976
malte.blombach@draeger.com

Drägerwerk AG & Co. KGaA
Moislinger Allee 53–55
23542 Lübeck, Germany
www.draeger.com

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Page 2 / 2

degree of random variability. Possibly, this variability is the cause for higher flexibility and more robust functionality in comparison to diseased biological systems.¹ As a result, missing heart rate variability is considered as a risk factor for patients with cardiac insufficiency.² Patients who were successfully weaned from the ventilator show a higher respiratory variability than patients for whom the weaning failed.³

Examinations of Gama de Abreu et al. on swines have shown that an artificially created variability in the breathing support results in better oxygenation amongst other things.⁴ This suggests that ventilators can improve weaning if they have the possibility to ventilate patients with a random variability. The work of the award-winner should supply additional information on this.

Origin of the prize

The prize is named after Dr Ing. h.c. Bernhard Dräger (1870 - 1928), the son of company founder Heinrich Dräger. In just 28 years, he and his father were awarded 261 German, 443 foreign and 912 utility patents. Bernhard Dräger's philosophy was "invention is an act of imagination, the creation of something new." This prize is awarded for the second time in 2009 and aims to support and distinguish this ethos.

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Investor Relations, Vanina Herbst, Tel: +49 451 882 2685. E-Mail: vanina.herbst@draeger.com

Contact

Corporate Communications:
Burkard Dillig
Tel +49 451 882-2185
burkard.dillig@draeger.com

Trade press:
Malte Blombach
Tel +49 451 882-1976
malte.blombach@draeger.com

¹ Buchman TG: The community of the self. *Nature* 2002; 420: 246-251.

² Priori SG et al: Task Force on Sudden Cardiac Death of the European Society of Cardiology. *Eur Heart J* 2001; 16: 1374-1450.

³ Wysocki M et al.: Reduced breathing variability as a predictor of unsuccessful patient separation from mechanical ventilation. *Crit Care Med*. 2006 Aug; 34

⁴ Gama de Abreu, M. et al: Noisy pressure support ventilation: A pilot study on a new assisted ventilation mode in experimental lung injury. In: *Crit Care Med* 2008 Vol. 36, No. 3.

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23542 Lübeck, Germany
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