References


(Accepted for publication January 13, 1999)

In Reply—I thank Drs Jones and Taylor for their interest in and comments about my editorial.1 They reinforce my point that currently available non-subtype-selective α2 agonists have sedative and hemodynamic effects, and that, at high doses, these hemodynamic effects may cause undesirable side effects. In addition to the cardiovascular and pulmonary effects discussed by Drs Jones and Taylor, at high doses, these compounds may have deleterious effects on vital organ blood flow in animals and humans. When α2 agonists are used for sedative purposes, their peripheral vasoconstrictive effects seem to cause most of the undesirable side effects, such as the ones described by Drs Jones and Taylor. Fortunately, it appears that the centrally mediated sedative/sympatholytic effects and the peripherally mediated vasoconstrictive effects are mediated by different α2 receptor subtypes. To provide the desired therapeutic effect (sedation) without side effects (vasoconstriction) is precisely why subtype-specific α2 agonists may, in the future, provide the bases for a reversible intravenous anesthetic technique in humans. However, before my enthusiasm for the potential role of the use of α2 agonists in a reversible intravenous anesthetic technique can become reality, new drugs must be developed, undergo rigorous preclinical and clinical testing, and be evaluated by experts in appropriate regulatory agencies, as is common with all new drugs. Meanwhile, continuing research work in this area will lead to better understanding of these compounds, help us to avoid serious side effects, and improve the anesthetic care of animals and humans.

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Reference


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Janos Balassa and Rudolf Eisenmenger: Forgotten Pioneers of Resuscitation

To the Editor.—The review of Juvin and Desmonts1 is excellent, especially with respect to French contributions to internal cardiac massage. However, two pioneers are missing.

Firstly, Janos Balassa (1814–1868) should be mentioned, who, in 1858, successfully performed cricothyrotomy followed by chest compressions during a case of asphyxiation from laryngitis.2,3

Secondly, Rudolf Eisenmenger (1871–1946) published, in 1903, a device for suction and pressure on the abdomen (and lower chest) to promote breathing and circulation.4 He was the first to propose active compression–decompression cardiopulmonary resuscitation (ACD-CPR) and a device (Lautenschläger, Munich, Germany) to do so, which was later named Biomotor.5 With his device at least one successful resuscitation in cardiac arrest is documented.6 Animal experiments in 1929 showed the device to generate not only blood pressure, but also blood flow, as evidenced by carbon dioxide exhalation and transport of intravenously injected dye to all parts of the body.7 Eisenmenger worked on and published information about ACD-CPR from 1903 until 1942.8 He thus upheld external cardiac resuscitation in the "dark age" of the review.9

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between World Wars I and II. Although the device was used as a
ventilator in several hospitals, few contemporaries took the idea of
ACD-CPR seriously. In 1949 Smithline et al. using a Hayek Oscillator
(Braasy Medical, London, UK) as a substitute for the Biomotor, con-
firmed his findings.

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In Reply.—We thank Dr. Koetter and Dr. Maleck for commencing
our work on the history, in the United States, of the
discovery of cardiac massage. Their remarks are interesting but call for
a number of comments about the facts and the thrust of our article.

Janos Balassa did indeed report experimenting with compression of
the chest, but he shared with a very large number of authors of the
stimulating artificial ventilation, as opposed to cardiac
massage. His own words leave no room for ambiguity: "I exerted
bellows-like rhythmic pressure to the chest imitating breathing."
As for Eisenmenger, we agree that he made a large contribution to the
history of cardiac massage. He developed a technique of compression
of the chest and abdomen similar to that described by Crile. His
primary goal, however, was to improve ventilation rather than circula-
tion, as pointed out recently by Koetter and Maleck: "In 1900... a
device for suction on the upper thorax is proposed as a method to
improve ventilation of the lung apices in tuberculosis." Only later, at
a time when the scientific community had accepted cardiac massage
and was aware of the results obtained by Crile, did Eisenmenger
suggest that his technique be used in circulatory arrest.

Beyond the raw historical facts, our main objective was to analyze
why a technique (external cardiac massage) fell into oblivion after
being developed and widely commented on by the scientific commu-
nity. To illustrate how extraordinary was this passage into limbo, we
selected those American and European experiments that were per-
formed earliest and that made the largest contributions to scientific
debate at the beginning of the twentieth century.

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