

fundamental significance in determining the power delivered and the temperature achieved. Other important factors include device geometry, liquid flow in the wick, catalytic actions, and airflow.

From a public health perspective, we think the questions are, “What is the full toxicologic terrain of the vaping process?” and “Can ENDS be better designed to be safer?”

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Since publication of their letter, the authors report no further potential conflict of interest.

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Sodium Zirconium Cyclosilicate for Urgent Therapy of Severe Hyperkalemia

TO THE EDITOR: Severe hyperkalemia (serum potassium level, ≥ 6 mmol per liter) can cause lethal cardiac arrhythmias and represents a medical emergency. Existing therapies do not remove excess potassium (intravenous calcium, bicarbonate, insulin, and dextrose and inhaled β -adrenergic agonists), have uncertain short-term efficacy and poor safety profiles (exchange resins), or are invasive and costly (emergency hemodialysis).

We recently reported the results of two phase 3, randomized trials involving more than 1000 patients that indicated that sodium zirconium cyclosilicate (ZS-9) was effective in lowering the serum potassium level in a broad cross section of patients with hyperkalemia.^{1,2} In the total cohort of the combined studies, 45 patients had a baseline serum potassium level of at least 6.0 mmol per liter (range, 6.1 to 7.2) and received a 10-g dose of ZS-9. This letter reports the short-term changes in the serum potassium level within the first 4 hours after the initial 10-g dose of ZS-9 in this subgroup of patients with severe hyperkalemia.

The change from baseline in the serum potassium level was assessed with the use of a paired t-test. Kaplan–Meier life tables were used to estimate the time to a serum potassium level that was less than 6.0 mmol per liter and the time to a level that was 5.5 mmol per liter or less. The

study had more than 90% power to detect a reduction of 0.4 mmol per liter in the serum potassium level according to a two-sided hypothesis test that accounted for multiple end points. Two data points were missing for one patient (at 2 hours and 4 hours).

The mean serum potassium level at baseline was 6.3 mmol per liter (95% confidence interval [CI], 6.2 to 6.4). After one 10-g dose of ZS-9, the mean serum potassium level declined by 0.4 mmol per liter (95% CI, 0.2 to 0.5) at 1 hour, by 0.6 mmol per liter (95% CI, 0.4 to 0.8) at 2 hours, and by 0.7 mmol per liter (95% CI, 0.6 to 0.9) at 4 hours ($P < 0.001$ for the comparison of each time point with baseline) (Fig. S1 in the Supplementary Appendix, available with the full text of this letter at NEJM.org). The median time to a serum potassium level that was less than 6.0 mmol per liter was 1.07 hours, and the median time to a level that was 5.5 mmol per liter or less was 4.00 hours. By 4 hours, 80% of the patients had a serum potassium level that was less than 6.0 mmol per liter, and 52% had a level that was 5.5 mmol per liter or less. There were no serious adverse events or cases of hypokalemia (serum potassium level, < 3.5 mmol per liter) during the initial 48 hours of treatment with ZS-9.

In conclusion, in patients with severe hyperkalemia at baseline, treatment with a single 10-g

dose of ZS-9 resulted in a rapid and significant reduction in the serum potassium level as early as 1 hour after administration. These findings suggest that ZS-9 may be a therapeutic option in the urgent treatment of patients with severe hyperkalemia.

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The "6th Annual Internal Medicine Board Review and Update" will be held in Sunrise, FL, May 30–June 3.

Contact the Cleveland Clinic Foundation Center for Continuing Education, 9500 Euclid Ave., KK31, Cleveland, OH 44195; or call (954) 659-5490; or see <http://www.ccfme.org/goIMBR>.

NEW DIRECTIONS IN VIOLENCE PREVENTION

The conference will be held in Milton, MA, on May 12. It is sponsored by the Curry College Master of Arts in Criminal Justice Program, in collaboration with Grandmothers Against Gun Violence, Cape Cod.

Contact Jen Balboni, Curry College, 1071 Blue Hill Ave., Milton, MA 02186; or call (617) 979-3520; or e-mail jbaldoni0608@curry.edu; or see <http://www.curry.edu/violenceprevention.html>.

MATERNAL, FETAL, AND NEONATAL CARE CONFERENCES

The following conferences will be held: "Ultrasound meets Magnetic Resonance" (Rome, April 22–24); "2nd European Congress on Intrapartum Care: Making Birth Safer" (Porto, Portugal, May 21–23); "Fetus as a Patient" (St. Petersburg, Russia, June 11–13); and "Summer Conference on Neonatology" (Avignon, France, June 25 and 26).

Contact MCA Scientific Events, Via Binda 34, 20143 Milan, Italy; or call (39) 2 34934404; or fax (39) 2 34934397; or e-mail luerti@mcascientificevents.eu or direnzo@mcascientificevents.eu; or see <http://www.ultrasoundsrome2015.eu>, <http://www.ecic2015.org>, <http://www.fetus2015.eu>, or <http://www.neonatalinprovenance2015.org>, respectively.

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The 58th annual meeting, entitled "Asthma 2015: Mechanisms to Personalized Medicine," will be held in Aspen, CO, June 10–13.

Contact Dr. Monica Kraft, c/o Jeanne Cleary, Thomas L. Petty Aspen Lung Conference, P.O. Box 1622, Parker, CO 80134; or call (303) 358-2797; or fax (720) 851-1034; or e-mail Jeanne.Cleary@ucdenver.edu; or see <http://www.aspenlungconference.org>.

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