Research, training and achieving great heights

Dr Andrew Cumpstey
CT1 (ACCS Anaesthetics), Southampton
DM, 34yrs old

- PC: Increasing SOB for 6-8/52
- PMHx – nil,
- DHx – nil
- 67kg, 178cm
DM - On examination:

- A  • Patent, speaking short sentences
- B  • Chest clear, RR=60, Sats 34% (air)
- C  • HS normal, HR 112, BP 132/85
- D  • GCS 15/15, fully alert + orientated
DM - Arterial Blood Gas

- pH: 7.45
- PaO2: 2.55
- PaCO2: 2.09
- BE: -9.16

Varying pathology

Low numbers

Consent?

uncontrollable factors?

Different patient groups

Ethical – Very sick!
ACE gene

Normal Population

Elite high-altitude climbers

ARDS mortality

P<0.05

Am J Respir Crit Care Med 2002 Sep 1;166(5):646-50.

Oxygen Cascade
The ‘big 4’ questions:
Xtreme Alps, 2010
EBC – 5300m

Namche – 3500m
Reduced coagulation at high altitude identified

Martin DS¹, Patel JS, Vercueil A, Doyle PW, Mythen MG, Grocott MF

Cardiac response to hypobaric hypoxia: persistent changes in cardiac mass, function, and energy metabolism after a trek to Mt. Everest Base Camp

Cameron J. Holloway,⁎,†,¹ Hugh E. Montgomery,‡, Andrew J. Murray,⁎,†,² Lowri E. Cochlín,⁎,† Ion Codreanu,† Naomi Horwood,* Andrew W. Johnson,⁎,† Oliver J. Rider,‡ Denny Z. H. Levet,‡ Stefan Neubauer,† Michael P. W. G. Xtreme Everest Research Group

*Department of Physiology, Anatomy, and Neurosciences, Clinical Magnetic Resonance Research, University College London (UCL) Centre for Altitude, Space and Extreme Medicine, London, United Kingdom; †Wellcome Trust Centre for Human Genetics, Headington, Oxford, United Kingdom

Cerebral Venous System and Anatomical Predisposition to High-Altitude Headache

Mark H. Wilson, BSc, MRCP, FRCS (SNI), EIMC, MRC, FRGS,¹,3,6,9,13,14

Effects of Prolonged Exposure to Hypobaric Hypoxia on Oxidative Stress, Inflammation and Gluco-Insular Regulation: The Not-So-Sweet Price for Good Regulation

Mario Siviero¹, Heather L. Riley², Bernadette O. Fernandez³,⁴, Carl A. Leckstrom³, Daniel S. Martin⁵,⁶, Kay Mitchell⁵,⁶, Denny Z. H. Levet⁵,⁶, Hugh E. Montgomery⁵, Monty G. Mythen⁴, Michael P. W. Grocott⁴,⁵,⁷,⁸, Martin Feehly⁴,⁵,⁷,⁸, for the Caudwell Xtreme Everest Research Group, National Heart, Lung, and Blood Institute, National Institutes of Health, Bethesda, Maryland, United States; Caudwell Xtreme Everest, Oxford, United Kingdom; John Radcliffe Hospital, Oxford, United Kingdom; Centre Suisse de Recherches Antarctiques, Fribourg, Switzerland; Centre for a Healthy Heart in the 21st Century, Seoul, Republic of Korea; Centre for Emergency Medicine, University of Liverpool, Liverpool, United Kingdom; University of Texas Medical Branch, Galveston, United States; Department of Human Nutrition, Michigan State University, East Lansing, United States;…and the Birmingham Medical Research Council; individuals develop high-altitude headache

Drs Rodway and Wong: The Centre for (Drs Rodway, Edsell, and Windsor); and St...
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With thanks to:

Severn Foundation School & Musgrove Park Hospital

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