

International Conference on

CARDIOVASCULAR MEDICINE

August 01-02, 2016 Manchester, UK

The impact of vasoconstrictors on human pulmonary artery

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Little data are available on the characterization of the basic physiological pulmonary vascular reactivity to vasoconstrictors. The aim of this study was to characterize pharmacological properties of human pulmonary artery (PA). Patients undergoing lung resection were consented for inclusion in this study. Research ethics committee approval was obtained and total 19 patients were enrolled for this study. Pulmonary arteries dissected from disease free areas of lung resection and 57 PA rings of internal diameter 2-4 mm and 2mm long were prepared. Integrity of endothelium was confirmed with 1 μ M acetylcholine and KCl was used to check the contractility of PA rings. Multi-wire myograph system was used to mount the PA rings under physiological conditions in modified Krebs solution. A basal tension of 1.61gm was applied and the rings were left to equilibrate for 60 min. After equilibration increasing concentration of potassium chloride, Nor-adrenaline, Adrenaline, Vasopressin, Endothelin-1 and Prostaglandin F2a were used. Endothelin 1 was the most potent vasoconstrictor and PGF2a and KCl are equally highly efficacious. Vasopressin had no effect on the pulmonary artery while adrenaline and noradrenalin resulted in significant increase in pulmonary contraction. This study demonstrated the differential effect of vasoconstrictors on pulmonary vessels. Vasopressin may be safe to use for systemic vasoconstriction in patients with pulmonary hypertension.

Biography

Azar Hussain has completed his MBBS from Pakistan and completed his MRCS from Royal College of Surgeons of Edinburgh. He completed his MSc in Translational Research in cardiovascular medicine from University of Bristol. Currently, he is pursuing his MD on 'Effect of oxygen on small human pulmonary artery' from Hull York Medical School. He is also pursuing a diploma in Post-graduate research training and an MSc in Healthcare Improvement leadership. He published 5 papers in reputed journals and delivered talks on both national and international cardiothoracic forum.

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