

## **VOLUME 6(3) September 1986**

Below are short overviews of the articles and supplement that appeared in this issue of VOLUME.

### **Infection Control in the Respiratory Laboratory (F. A. Tosolini MBBS., PhD., FRCPA. Department of Medical Microbiology, Austin Hospital, Heidelberg, Victoria)**

Although this informative article was written before the introduction of low resistance barrier filters suitable for use during lung function testing, the potential for cross-infection via testing equipment was well appreciated. Thus, Dr Tosolini's review article did not focus on *reducing* the risks of *equipment* contamination (e.g. by using filters and disposable 'sensors') but on scientists awareness of the basic principles of hygiene, the prevention of transmission of infection and methods for rendering items safe to handle. Topics discussed included methods of decontamination, disinfection and sterilization as well as ensuring a safe the laboratory environment (e.g. benches and equipment surfaces, floors), staff (e.g. hand washing, protective clothing, need for pre-employment Mantoux test and annual Influenza vaccine) and the equipment (disposable items, re-usable equipment such as mouthpieces, spirometers, Douglas bags, etc).

Dr Tosolini describes one unusual method for disinfecting complex and inaccessible interior surfaces of lung function equipment and one that we used when I worked at the Austin Hospital. The methods involved crushing 30 paraformaldehyde tablets in a 50 L Douglas bag. The bag was then filled with room air and left for 30 minutes. The paraformaldehyde vapour generated within the bag was then forced into the equipment to be decontaminated and left overnight before being flushed via an external air vent. We used this method to decontaminate our volume displacement spirometers (used for measuring DLCO, CO<sub>2</sub> sensitivity and the dynamic and static lung volumes) and gas analysers (CO, CO<sub>2</sub>, O<sub>2</sub> and He) that we used routinely to sample expired gas.

### **Standardization of Exercise Testing in the Asthmatic Patient: A Challenge in itself (Sandra D. Anderson and Robin E. Schoeffel. Department of Thoracic Medicine, The Royal Prince Alfred Hospital, Camperdown, NSW)**

This well written and informative article was reprinted from "Airway Responsiveness and Interpretation" (Eds Hargraves F.E. and Woolcock A.J.) with permission from ASTRA Pharmaceuticals Canada Ltd.

Dr Sandy Anderson is a prominent member of our Society and a noted international researcher. The authors have contributed substantially to our understanding of airway hyperresponsiveness, including exercise-induced asthma (EIA), of which Dr Anderson was a senior author of one of the first definitive papers on the subject (Anderson et al., Br J Dis Chest, 69: 1-39, 1975). Dr Anderson was the foundation recipient of the ANZSRS Research Medal (Fellowship).

EIA is common in asthmatic children and adults with a prevalence approaching 80%. It is characterised by increased asthma symptoms (e.g. wheeze, chest tightness, cough and breathlessness) and airflow limitation during or following a bout of exercise. It can present itself as exacerbation of asthmatic symptoms and/or the development of

airflow limitation following exercise in people with normal pre-exercise spirometry. The latter is often referred to as exercise induced bronchospasm (EIB). This article reviews EIA as a measure of airway responsiveness and includes proposals for standardising the challenge test. The topics covered include: 1) which measure of lung function (e.g. FEV<sub>1</sub>, PEF, FEF<sub>50%</sub>, FEF<sub>25-75%</sub>, SGaw); 2) expression and analysis of results; 3) reproducibility; 4) the factors determining the severity of response to exercise; 5) prevalence of EIA, and 6) recommendations for exercise testing in asthmatics.

We are very fortunate indeed that Dr Anderson has chosen to maintain a close relationship with the ANZSRS and to first present much of her novel data at our ASM.

**SUPPLEMENT: Spirometry and Lung Volumes: A Review of the Methods, Indications, Normal Values, Pitfalls, Reproducibility (R. J. Pierce MD, FRACP, Respiratory Function Unit, Repatriation General Hospital, Heidelberg, Victoria)**

The publication of this 22 page supplement was made possible through support of ASTRA Pharmaceuticals Ltd who sponsored the printing costs.

This supplement is a major work that had significant impact at the time not only for its scientific and educational value but also on the standing of our Society. Professor Rob Pierce is a well known clinical and academic respiratory and sleep physician with particular interest in physiology.

This detailed review should be mandatory reading for all respiratory scientists who wish to gain insight into the theory and practice of spirometry and lung volumes. The topics covered include:

- Spirometry
- Spirometric measurements
- Tests used in spirometry
- Theory of expiratory airflow limitation
- Ventilatory measurement without an airway connection
- Normal ranges for spirometric values
- Variability of spirometric measurements
- Equipment standards and pitfalls
- Principles and pitfalls of spirometric technique
- Relative requirements and indications for the various tests
- Measurement of static lung volumes
- Inert gas dilution measurements
- Body plethysmography
- Graphic methods of lung volume measurement
- Complementary use of the three methods for measuring static lung volumes
- Comparison between the three methods of measuring static lung volumes

- Measurement of the volume of subdivisions of the lungs
- Individual lung and lobar spirometry
- Absolute volume of subdivisions of the lungs

*I would urge all members who have not read this supplement (and also those who have not read it recently) to place it high on their list of reading priorities. I will discuss with the Editor and Professor Pierce for this review to be posted in full on the ANZSRS website as I believe it is included as recommended reading for those studying for the CRFS examination.*

*As I have often lauded, it is not what you know (i.e. facts) that is really important. What empowers you is to know 'why' as only then do you have the tools to enable you to apply the knowledge and take it further. In many respects this review provides you with just that.*

**Please contact me if you are interested in a copy of this or any other issue of VOLUME.**

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