

## Reports of Scientific Meetings

Ellis N. Cohen, M.D., Editor

### Fifth World Congress of Anaesthesiologists

The Fifth World Congress of Anaesthesiologists met in Kyoto, Japan, September 19-23, 1972. More than 3,000 anesthesiologists from 50 countries attended the meeting, located in the magnificent International Conference Hall, and more than 450 Free Communications were presented. From the opening ceremony, highlighted by remarks by Crown Prince Akihito, to the end of the meeting, the Japanese were warm and well-organized hosts.

The major emphasis of the papers on shock was the "shock-lung syndrome." W. A. Mason (U. S. A.) prevented pulmonary damage in dogs with *E. coli*-induced endotoxin shock by administration of adenosine triphosphate or prostaglandin E. E. M. Nagano *et al.* (Japan) suggested that the pulmonary damage in "shock-lung syndrome" may be caused by an elevated pulmonary arterial pressure, vasoconstriction, and secondary obstruction of the pulmonary microcirculation. These vascular changes could be partially prevented by heparin or isoproterenol. To transfer these results to man, one must ask whether *E. coli*-induced endotoxin shock is comparable to "shock lung" in patients. In rabbits with fat emboli, O. Mayrhofer *et al.* (Austria) observed a degeneration of the surface tension properties of the lung, and suggested that this is responsible for the "shock lung." However, he was unable to determine whether surface tension changes represented "cause" or "effect." W. E. Zimmermann *et al.* (Federal Republic of Germany) studied patients in hypovolemic shock divided into four treatment groups: 1) control, 2) heparin, 3) protease inhibitor, and 4) heparin plus protease inhibitor. The patients were monitored with several cardiorespiratory monitors, and best results were obtained in the group receiving heparin plus protease inhibitors.

The section on muscle relaxants re-investigated *d*-tubocurarine-induced hypotension and histamine liberation. In dogs, D. C. Lee (U. S. A.) found that intravenous injection of

histamine, 0.2 mg, and administration of *d*-tubocurarine produced identical depression of blood pressure, cardiac output, and stroke volume. A histamine depleter, brocresine, prevented *d*-tubocurarine-induced hypotension almost completely. K. Fukushima (Japan) was further able to correlate the magnitude of *d*-tubocurarine hypotension with blood histamine levels in man. In the search for a short-acting nondepolarizing muscle relaxant to replace succinylcholine, A. J. Coleman (South Africa) observed a mean onset time of 37 seconds and a return to 80 per cent of control twitch height of only 6 minutes following administration of M & B 15944-A to conscious man. Y. Yamamura *et al.* (Japan) used the technique of receptor occlusion in man and found the safety factor of neuromuscular transmission in human palmar muscle to be much lower than that of the cat tibialis muscle reported by Waud and Waud.

Use of plasma expanders was the dominant theme of the section on fluid therapy. W. Vogel (Federal Republic of Germany) reported hydroxyethyl starch to be as effective as plasma, Dextran 70, or gelatin in the replacement of 1,000 ml of blood loss in human volunteers. The starch preparation has the advantage of not releasing histamine. C. Silvey (U. S. A.) reported the use of 3.5 per cent electrolyte-gelatin solution for partial hemodilution during cardiopulmonary bypass. B. Holscher (Germany) successfully treated iso-volemic shock in rats with Dextran 60 or hydroxyethyl starch, thus avoiding the risk of hepatitis. It appears that the emphasis on plasma expanders is much greater in other countries than in the United States. During a visit to Kyoto University Medical School, this author found Dextran to be commonly administered intraoperatively.

P. Singh (India) followed several cardiorespiratory variables in patients with hemoglobin values less than and greater than 10 g/100 ml undergoing cesarean section with

general anesthesia. He found no difference between the two groups, which casts doubt on an arbitrary decision to cancel operation when hemoglobin is less than 10 g/100 ml. H. Tamura (Japan) found that with the same inspired halothane concentration, blood levels were higher initially in dogs after hemorrhage. This finding was attributed to a decrease in the intravascular capacity for halothane. In addition, the tissue uptake of halothane may have been reduced because of poor peripheral circulation.

How does one objectively compare drugs used for premedication? This question was asked by several investigators. W. H. Forrest (U. S. A.) suggested that apprehension, restlessness, and confusion are not sensitive indices of "adequate premedication." Sedation was found to be a sensitive indicator. On the other hand, V. N. Tsibuliak (U.S.S.R.) successfully used the Minnesota Multiphase Personality Inventory test, which evaluates anxiety, hypochondriasis, apathy, paranoia, and anosognosia, in determining the efficacy of premedicant drugs. Another approach suggested was that the scoring systems should include measurement of the cardiovascular response to anxiety, which may minimize the error in purely subjective measurements (R. A. Barker, Canada).

In the postoperative scene, A. J. Aldrete (U. S. A.) suggested that a modification of the Apgar method for evaluation of newborn infants be used to assess the physical status of patients recovering from surgery and anesthesia. The "Postanesthetic Recovery Score" would be based on activity, respiration, color, and circulation. P. F. Baskett (United Kingdom) was able to relieve pain in postoperative patients and in ambulance patients by using 50 per cent nitrous oxide and oxygen from a demand apparatus. J. F. Wurster (Federal Republic of Germany) demonstrated that intercostal-nerve blocks with 0.5 per cent bupivacaine provided more pain relief and less impairment of pulmonary function than either meperidine or piritramide in patients recovering from upper abdominal surgery.

Eleven papers on ketamine were presented in the section on intravenous anesthetics. Most described clinical experiences. Ketamine was successfully used as an anesthetic for in-

traocular (A. K. Adams, United Kingdom) neurodiagnostic (O. M. Sobczak, Brazil), and pediatric dental (L. Mesquita, Mozambique) procedures. In addition, the elderly patient (J. Gessing, Sweden) and those in shock (K. Peter, Federal Republic of Germany) tolerated ketamine anesthesia well. The unpleasant postoperative dreams from ketamine can be minimized by administration of diazepam, 5 mg/6 kg, at the end of the operative procedure (D. L. Coppel, Northern Ireland). H. Lutz (Federal Republic of Germany) found catecholamine levels in the venous blood of dogs not elevated after the administration of ketamine. He concluded that ketamine administration resulted in an increase in heart rate through anticholinergic action and an increase in peripheral resistance by stimulation of the alpha receptors. K. C. Kim (U. S. A.) antagonized ketamine-induced sleep with Dopram. However, the short duration of action of Dopram limited its usefulness in the postoperative period.

One session was primarily concerned with the effects of anesthetics on myocardial function. In relating oxygen consumption and myocardial tension in dogs, D. Kettler (Federal Republic of Germany) demonstrated that halothane and methoxyflurane resulted in a relatively greater oxygen cost than ketamine, nitrous oxide, piritramide, or neuroleptanesthesia. S. Shimosato (U. S. A.) suggested that the myocardial depressant effect of halothane may be more dangerous in patients with congestive heart failure. From a biochemical point of view, sodium acetate, which antagonizes halothane-induced myocardial depression *in vitro*, will not do so in dogs *in vivo* (S. H. Jackson, U. S. A.).

In the area of new drugs, the search for longer-acting local anesthetics continues. Astra W-19053 has a duration of action the same as (P. C. Lund, U. S. A.; P. O. Bridenbaugh, U. S. A.) or slightly longer than (G. Engberg, Sweden) that of bupivacaine. Although Astra W-19053 is metabolized by the liver (M. Blair, U. S. A.), it may have a shorter onset of action and less toxic effects than bupivacaine (D. B. Scott, United Kingdom). The duration of nerve-block anesthesia in laboratory animals was found to be longer with HS-37 than with bupivacaine (B. Akerman, Sweden). How-

ever, G. Engberg (Sweden) reported no difference between bupivacaine and HS-37 used for epidural analgesia. G. Rolly (Belgium) reported the duration of action of R-22-700 to be only 180 to 260 minutes.

Five papers concerning the new steroid anesthetic, Althesin (CT-1341) were presented. D. Patscke (Federal Republic of Germany) reported that the administration of larger doses increased heart rate, pulmonary arterial pressure, and left ventricular end-diastolic pressure in dogs. Although stroke volume decreased, cardiac output increased and mean aortic pressure decreased. However, T. M. Savage (United Kingdom), J. W. Dundee (Northern Ireland), and T. Takahashi (Japan) reported significant hypotension in both animals and man. Perhaps species variation may account for the differences in these observations. D.

J. Stewart (Canada) reported that CT-1341 does not increase intracranial pressure, which is of particular interest, since many other anesthetics do have this effect.

Ten general symposia were conducted, each directing itself to a specific topic. The topics ranged widely, including discussion on pain clinics, acid-base balance, and Anesthesiology in the future. These symposia provided an opportunity for anesthesiologists from many countries to discuss both concepts and methods of practice. This probably represented one of the main values of the meeting.

RONALD D. MILLER, M.D.  
Departments of Anesthesia and  
Pharmacology  
University of California  
San Francisco, California 94122

---

### Neonatology

**LONG-TERM FOLLOW-UP OF RDS** This is a follow-up study of 53 infants who survived the neonatal respiratory distress syndrome (RDS). Complete clinical recovery was evident prior to discharge. Eleven infants (20.8 per cent) had lower-respiratory-tract illnesses which necessitated a total of 33 subsequent admissions to the hospital after their original discharges. Three of the eleven had significant respiratory disease which necessitated ventilatory assistance. Follow-up chest x-rays demonstrated various degrees of peribronchial thickening and pulmonary overdistention as evidence of persistent pulmonary disease. The roentgenographic findings were different from those characteristic of the Wilson-Mikity syndrome or bronchopulmonary dysplasia.

This retrospective study suggests that survival from RDS is not to be construed as absence of abnormal lung function. Close follow-up of all infants who have recovered from RDS is mandatory. (*Outerbridge, E. W., and others: Idiopathic Respiratory Distress Syndrome—Recurrent Respiratory Illness in Survivors, Am. J. Dis. Child. 123: 99-104, 1972.*) EDITOR'S COMMENT: We may not be too far away from a generation of children and young adults who may prove to be a pulmonary problem if and when they require major surgery. The importance of this point should be emphasized to parents of infants who recover from RDS in order for it to appear in subsequent medical histories.