

Literature Briefs

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Briefs were submitted by Drs. J. Adriani, C. M. Ballinger, N. Bergman, R. B. Boettner, R. Bickwell, P. P. Bosomworth, D. R. Buechel, D. Duncalf, J. E. Eckenhoff, M. Helrich, J. Jacoby, E. M. Kavan, R. L. Klein, F. C. McPartland, W. H. Mannheimer, R. C. Morton, J. W. Pender, R. E. Ponath, A. D. Randall, H. S. Roc, L. J. Saidman, P. H. Sechzer, A. D. Sessler, and E. A. Talmage. Briefs appearing elsewhere in this issue are part of this column. Abstracts of Russian and Japanese literature were obtained from *Excerpta Medica Foundation*.

Circulation

ATRIAL FIBRILLATION Hemodynamic studies were performed in patients with well controlled atrial fibrillation before and after conversion of the arrhythmia to normal sinus rhythm: 26 patients were converted with quinidine and 22 with direct current defibrillation. Five to ten days following conversion with quinidine, the cardiac index (CI) had increased 22 per cent, stroke volume (SV) increased 44 per cent, heart rate decreased 15 per cent, A-V oxygen difference decreased 20 per cent and circulation time decreased 29 per cent. Seven days following conversion with D-C countershock, CI had increased 33 per cent, stroke volume increased 45 per cent, heart rate was unchanged, A-V oxygen difference decreased 9 per cent and circulation time decreased 12 per cent. It is concluded that a normally positioned atrial systole contributes importantly to ventricular function and conversion of chronic atrial fibrillation to sinus rhythm is followed by significant increase in cardiac output. (Rodman, T., and others: *Effect on Cardiac Output of Conversion from Atrial Fibrillation to Normal Sinus Mechanism*, *Amer. J. Med.* 41: 249 (Aug.) 1966.)

HEART BLOCK Enteric coated variably timed release isoproterenol hydrochloride (isoprenaline) (Saventrine) in rather high average daily dosage enabled 12 of 26 subjects with complete heart block to discontinue use of artificial pacemakers or averted the need for pacemakers altogether. Except in cases with ventricular tachycardia or fibrillation, its trial under controlled conditions appears clearly justified. (El-Nahas, M. M., and others: *Clinical Evaluation of Oral Long-acting Isoprenaline in Treatment of Heart-block*, *Brit. Med. J.* 2: 735 (Sept.) 1966.)

HYPERCARBIA AND MALFORMATIONS Various types of congenital cardiac malformations were produced in rats by subjecting a mother rat to an atmosphere of 6 per cent carbon dioxide, 10 per cent oxygen, and 84 per cent nitrogen for 24 hours sometime between the fifth and sixteenth day of gestation. Cardiac malformations occurred in 28.1 per cent of the exposed rats as against 4.5 per cent in the controls. The defects included ventricular septal defects, overriding aorta, truncus communis, partial transposition and pulmonic stenosis. Previous work showed a similar incidence and pattern of malformations in rats exposed to the same hypercarbic atmosphere but with a normal oxygen concentration of 20 per cent. A third study with a 10 per cent oxygen atmosphere but without hypercarbia failed to produce the malformations. Carbon dioxide has been known to stimulate growth in utero. It is conceivable that increased carbon dioxide tension caused an overgrowth of tissues developing at the time of exposure leading to abnormal organ development. (Haring, O. M.: *Cardiac Malformations in the Rat Induced by Maternal Hypercapnia with Hypoxia*, *Circ. Res.* 19: 544 (Sept.) 1966.)