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Aortic-Mitral Valve Disease

EFFECTIVENESS OF ANTIBIOTIC PROPHYLAXIS TO PREVENT PROSTHETIC VALVE ENDOCARDITIS: EVIDENCE IN HUMANS

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As prosthetic valve endocarditis (PVE) remains a definite risk after valve replacement, prophylactic antibiotics are recommended before diagnostic or therapeutic procedures that may cause transient bacteremia. Effectiveness of such prophylaxis, however, has never been proved clinically. We studied 532 consecutive patients (p) in our outpatient department over a period of one year. In whom antibiotic prophylaxis had been recommended according to the American Heart Association guidelines. In 27% of the 287 procedures were performed after administration of a correct prophylaxis. In none of these p a PVE occurred. No drug reactions were seen. In the remaining 304 p with 360 procedures requiring prophylaxis, no antibiotics were given. The incidence of PVE in this group was 1.54 per 100 procedures (n = 6). All six had to be re-operated with one operative death. Incidences for PVE per 100 procedures requiring prophylaxis, no antibiotics were requiring prophylaxis, no given. The incident of surgical VEG formation and result in preserved valve integrity, which might reflect an ongoing platelet activation.

ROLE OF PLATELETS IN INFECTIVE ENDOCARDITIS

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Complications in infective endocarditis are more common in patients with echocardiographically discernible vegetations (VEG) and more likely when VEG are large (> 10 mm in diameter). To assess whether platelets contribute to VEG formation, we measured platelet aggregation (PAG) in 30 patients prior to the transesophageal echocardiographic examination. PAG was stimulated with ADP and the aggregation concentration determined (ED50, IC50). The half maximal inhibitory effect (IC50) was correlated with presence or absence of VEG (0.71±0.79 in VEG+ and 1.68±0.55 in VEG-) and analysis of expired air for VO2, R, and VO2/HR (O2 pulse) were performed at each stage and at peak during a near upright (70°) graded bicycle ergometer maximal ex. protocol.

MS pts had reduced ex. tolerance (VO2peak = 13.8±2.1 in MS and 36.2±7.3 ml/kg/min in nls) with a fall (P<.05) in EDD, ESD, a small (P=NS) increase in SD/EDD and an unchanged SD. In nls EDD was unchanged and SD and SD/EDD significantly increased. R approached 1 in MS pts (.97±.11) and exceeded 1 in nls. O2 pulse increased (P<.05) to the same extent in both. Limited ex. tolerance in MS pts is associated with a falling EDV and failure to increase ejection fraction sufficient to increase stroke volume. Increase in O2 pulse in the MS pt thus reflects enhanced O2 extraction in response to a relatively reduced cardiac output. R thus approaches 1 at low work and VO2 levels.

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Factors that limit exercise (ex.) tolerance in 6 patients (pts) with severe mitral stenosis (MS) were 58±12 cm2 by pressure 1/2 time. Pts were in sinus rhythm, on diuretics only and had "pure" MS (by cath and echo). 14 normals (nls) comprised the control group. 2D targeted M mode echo ventricular dimensions (EDD, ESD, SD=EDD-ESD, and SD/EDD) and analysis of expired air for VO2, R, and VO2/HR (O2 pulse) were performed at each stage and at peak during a near upright (70°) graded bicycle ergometer maximal ex. protocol.

Fifty five patients (pts), were initially treated by fibrinolysis for prosthetic heart valve thrombosis during a 10 years period (32 mitral valve, 22 aortic valve, 1 tricuspid valve) Immediate results: fibrinolysis was entirely successful in 42 pts (76%), failure of thrombolysis was observed in 13 pts, leading to an emergency surgery in 7 pts. 6 pts died (4 stroke, 1 cardiac arrest, 1 hemorrhage). Medium and long term follow up was studied in 40 pts surviving and non reoperated after their initial thrombosis. 22 pts are alive at 5 ± 1 years, 6 pts died from extracardiac diseases, and 12 pts showed thrombosis recurrence (7 mitral valve, 5 aortic valve).

In conclusion, fibrinolytic treatment seems to be an attractive alternative for prosthetic heart valve thrombosis, particularly for critically ill patients. However, initial embolic rate is 20% high, with possible permanent damage; and late recurrence occur in 30% of our patients.