P2900 Predictors of systemic embolism and mortality in infective endocarditis

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Background: As one of the complications of infective endocarditis (IE), embolization has a great impact on the patient's prognosis. Previous studies that attempted to identify baseline clinical, laboratory and echocardiographic predictors of embolization led to conflicting results.
Objectives: To assess the value of clinical, laboratory and echocardiographic variables in predicting embolic events and in-hospital mortality in patients with definite left-sided IE.
Methods: This prospective study involved 99 patients with definite left-sided IE recruited from the prospective IE database of Cairo University Hospitals. TTE was performed in all patients. TEE was performed in 62.6% of the patients.
Results: Embolization occured in 40.4% of patients during index hospitalization. Female gender was a highly significant risk factor for embolization ($p = 0.003$). The only echocardiographic variable useful in predicting embolization was vegetation length ($p = 0.04$). At a cut-off value of 2.095 cm, the sensivity for predicting embolization was 50%, specificity 69.1% and positive predictive value 52.8%. Vegetation length was predictive of embolization in females ($p = 0.003$), but not in males and in native valves ($p = 0.05$), but not in prosthetic valves. The overall in-hospital mortality rate was 41.8%. Atrial fibrillation/flutter was a powerful predictor of mortality ($p = 0.001$) as compared to sinus rhythm. Not having surgery was a powerful predictor of mortality ($p < 0.001$), even if prosthetic valve IE was excluded from the analysis. Additionally, the presence of heart failure functional class III/IV or fulminant sepsis necessitating inotropic support were significant predictors of mortality ($p = 0.007$ & <0.001 respectively). The only echocardiographic parameter useful in predicting mortality was the presence of valvular stenosis ($p = 0.05$).
Conclusions: This study clearly shows that female gender is a highly significant risk factor for embolization, and that vegetation length is a useful predictor of embolization in females and in native valve IE. Atrial fibrillation/flutter, not having surgery, advanced heart failure and fulminant sepsis are all useful predictors of mortality, which allows identification of high-risk paients in whom an aggressive strategy will be potentially useful.

P2901 Infective endocarditis: a changing epidemiology?

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Introduction: Recent studies suggest a change in the epidemiological profile (EP) of infective endocarditis (IE) over the past few years, especially in industrialized countries.
Purpose: To estimate the prevalence of IE in the last 10 years in the studied population and to evaluate if there were changes of the EP during this period.
Population and Methods: 104 cases of IE were identified, from a total of 226,212 patients (P), admitted and hospitalized in our centre between January 1, 1998 and December 31, 2008. The P were divided in two groups (Gs), each of them with 52P, according to the date of diagnosis of IE: group 1 (G1) from January 1st 1998 to December 31st 2003, and group 2 (G2) from January 1st 2004 to December 31st 2008). These Gs were compared for clinical, predisposing factors and microbiological differences.
Results: The prevalence of EI in the studied period was 0.05%. The mean age of P with IE was 55.3 +17.6 years, with higher prevalence of males (71.2%). According to the mode of acquisition: 59.6% were community-acquired IE, 26% were health care-associated IE and 14.4% were intravenous drug abuse EI. 1.9% of P had rheumatic heart disease, 37.5% had valvular disease, 8.7% had prior IE, 25% had valve prosthesis and 8.7% had intra-cardiac devices. Staphylococci were isolated in cultures more frequently (40.4%) than streptococci (25%). The in-hospital overall mortality rate was 11.5%.
When comparing the two Gs, there was a higher average hospital stay in G1 (37.9±4.1 vs 27.8±2.5 days, $p <0.05$). G2 had higher proportion of P with intracardiac devices (1.9% vs 15.4%, $p <0.05$), cancer (3.8% vs 15.4%, $p <0.05$), immunosuppression (1.92% vs 15.4%, $p <0.05$) and referral to cardiac surgery (11.5% vs 44.2%, $p <0.05$). There was no statistically significant difference between the two Gs neither on mode of acquisition of EI nor on the proportion of P with rheumatic heart disease, prior IE, prosthetic valve or valvular disease, type of agents isolated or in mortality.
Conclusions: The prevalence of IE in the studied population was 0.05% and there were significant epidemiological differences between the P admitted in the different periods studied. In the group of P admitted in the last 5 years of study, there was a higher percentage of cases of IE in immunocompromised P, in P with cancer and with intra-cardiac devices. In this group there was a higher proportion of P referred for valvular surgery, with no impact on mortality.

P2902 Infective endocarditis. Epidemiological changes in a decade of experience

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Objective: To analyze changes in microbiological, echocardiographic, clinical and prognostic profile of infective endocarditis (IE) in the last 12 years.
Methods: We analyzed 729 consecutive episodes of IE. They were recruited prospectively at three tertiary referral centers between 1996 and 2008. They were classified into 2 groups: Group I (n=363), episodes of IE registered between June 1996 and December 2001, and Group II (n=366), episodes of IE registered between January 2002 and May 2008.
Results: In Group I patients were younger, 54 (16) vs 61 (16) years, and more frequently intravenous drugs users (IVDU) (12.7% vs 4.9%; p=0.001). Community acquired infections and previous cardiac disease (58% vs 71.6%; p=0.001) were more common in Group II. Prosthetic valve IE (28.5% vs 42.1%; p=0.001) was more frequent in Group II. Comorbidity was more common in Group II: diabetes (14.4% vs 23.1%, p=0.002), chronic anemia (12.7% vs 21.5%; p=0.002), renal failure (5.8% vs 11.9%, p=0,004), and neoplasm (5.3% vs 11%, p=0,005). In Group II, coagulase negative Staphylococcus (14.4% vs 20.8%, p=0.029) was isolated more commonly. At admission, fever, constitutional syndrome, and pulmonary and rheumatologic presentations were more frequent in Group I, whereas in Group II cardiac and abdominal presentations were more common. During hospitalization, septic shock (12.7% vs 18.9%; p=0.021) was observed more frequently in Group II. There were no differences in periannular complications, heart failure, valvular dysfunction, persistent infection and embolism. The need of cardiac surgery was higher in Group II (49.3% vs 58.7%; p=0.011). No differences were observed in hospital mortality (28.1% vs 28%).
Conclusions: In the last years (2002-2008), patients with IE were older and had a higher degree of comorbidity than in early years (1996-2001). In the last five years, prosthetic valve IE increased, and IE in IVDU decreased. Cardiac surgery increased in the last years, and mortality remained similar.

P2903 Novel biochemical diagnostic methods for cerebral embolism in the course of infective endocarditis

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Cerebral embolism (CE) in the course of infective endocarditis (IE) increases risk of death and influences on therapeutic decisions. In diagnosis of CE, except of brain imaging methods, some specific markers of cerebral damage are being searched for. Such novel markers are protein S-100B, neuronal specific enolase (NSE) and procoagulation markers E- and P-selectins.
Aims: 1. Evaluation of S-100B protein, NSE as specific markers in CE, 2. Correlation E- and P-selectins concentration with overt and silent cerebral embolism
Material and Methods: Study was performed on IE pts, diagnosis was established according to the Duke criteria. Evaluation of levels of S-100 protein, NSE, E- and P-selectin (3-times: in 0, 3, 5 day) were done.
Results: 65 pts (44 M, 21 F) with IE, in mean age 52 yrs: 39 pts with native valve IE, 26 pts with prosthetic valve IE. In 44,7% pts IE was localized on aortic valve. The study group was divided into 2 subgroups in base on presence or absence of clinical manifestation of brain damage: overt cerebral embolism (OCE) 13 (20%) pts, and without cerebral embolism (WCE) 52 (80%) pts. After clinical evaluation and MRI or CT brain imaging the group of patients was divided into 3 groups of pts: with OCE - 13 pts, with silent cerebral embolism (SCE) - 24 pts, WCE - 28 pts.There were statistically significant elevated levels of protein S100B in pts with cerebral embolism (OCE+SCE) than in WCE pts (0,01-1,44 mg/L, av. 0,27±0,3 vs 0,01-0,08 mg/L, av. 0,14±0,17, p=0,02). Levels of protein S100B in WCE and SCE group didn't differ (0,01-0,08 mg/L, av. 0,14±0,17 vs 0,01-0,52 mg/L, av.0,17±0,15, p=0,31). For protein S-100B ROC curve was created and a concentration 0,0969 mg/L (≈0,1mg/L) was estimated as a cut-off point characteristic for cerebral embolism. S-100B protein levels >0,1 mg/L makes two-times higher possibility of diagnosis of cerebral embolism (OR=1,994, 95% CI: 1,058-3,758). There was higher level of NSE in pts with CE than in WCE, but statistically not significant (6,3-76,9 ng/ml, av.15,64±12,07 vs 6,4 -25, av.11,4±4,36, p=0,06). E-selectin levels didn't differ in CE and WCE pts (15-194 ng/ml, av. 72,19±44,28 vs 20-138,5 ng/ml, av.58,69±33,87, p=NS), nor in SCE and WCE pts (22-180 ng/ml, av.66,51±39,02 vs 20-138,5 ng/ml, av.58,69±33,87, p=NS). There was higher level of P-selectin in pts with CE than in WCE (27-280 ng/ml, av. 71,33±44,69 vs 17,8-119, av. 50,94±22,5, p=0,01) and in SCE than in WCE pts (29-148 ng/ml, av. 67,83±30,2 vs 17,8-119, av. 50,94±22,5, p=0,02)
Conclusions: 1. Level of protein S-100B >0,1mg indicates on possibility of CE in the course of IE, 2. Procoagulated state in SCE is characterised by higher P-selectin level