Pseudomonas Endocarditis

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Brill and Libmann in 1899 were among the first to call attention to blood stream invasion by Pseudomonas aeruginosa. In 1904 Eastman and Keene reported a case of Bacillus pyocyaneus (Pseudomonas aeruginosa) septecemia associated with blastomycosis. Most of recent reports of sepsis due to Pseudomonas aeruginosa have concerned cases of bacterial endocarditis. In 1933 Fish, Hand and Keim[1] summarized four cases of Pseudomonas endocarditis in the literature. Morgues and Anderson[2] also noted this tendency for Pseudomonas endocarditis in the literature and added one of their own. They also noted the tendency for Pseudomonas to cause blood lesions. The review of Stanley[3] gives an account of the modes of virulence of Pseudomonas aeruginosa. Most of the cases he noted occurred in debilitiating patients.

Bacteremia due to Pseudomonas aeruginosa was a rarity until the era of modern antibiotics. In recent years many cases of bacteremia due to this microorganism have been reported. Their is unusual resistance of this bacterium to all of antimicrobial agents in common use. Pseudomonas bacteremia are sequels of urinary tract infections in most of which the microorganisms was introduced by instrumentation,[4]. Majority of the cases of bacterial endocarditis are caused by Streptococcus viridans group. On the other hand endocarditis due to enterococci or coliform organisms include Aerobacter aerogenes and Pseudomonas aeruginosa and various species of Proteus organisms[5].

A review done by Carruthers and Kanokeechayan[6] included the 30 reported cases of pseudomonas endocarditis which did not follow cardiac surgery. The presumed source of Pseudomonal bacteremia varied. By far the most frequent association occurred as with self administered intravenous injections taken by narcotic addicts. This association of narcotic use with Pseudomonas endocarditis probably accounts for the 2.5:1 male sex predominance and the relatively young (30 years) average age of the patients. Pseudomonas aeruginosa implants upon normal as well as abnormal cardiac valves. All of the tricuspid and approximately 50% of the affected mitral and aortic valves in this group were thought to have been normal before the infection. Pseudomonal endocarditis has been tested with new antimicrobial agents as they become available. Lloyd et al reported the successful therapy of a patient with unequivocal Pseudomonas endocarditis. Several antibiotics including large doses of polymyxin B and colistin sulfate were given. Documentation of endocarditis as source of Pseudomonas bacteremia is less certain in two other successfully treated cases. One case was cured by splenectomy in a patient in whom Pseudomonas bacteremia developed during antibiotic treatment of a prolonged illness diagnosed as sterile endocarditis. A number of treatment failures with polymyxin B and colistin regimens have been recorded.

REFERENCES:

1. Waisburn BA. Bacteremia due to gram negative bacilli other than Salmonella. Arch. Intern. Med. 1951; 88:466-478.

2. Morgues V, Anderson WAD. Endocarditis due to Pseudomonas aeruginosa. Ann. Intern. Med. 1943; 19:146-154.

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4. McDonald I, Rhoads PS and Knapp AK. Bacterial endocarditis due to Pseudomonas aeruginosa. JAMA 1958; 167:1490-1493.

5. Finland M. Current status of therapy in bacterial endocarditis. JAMA 1955; 166:364-373.

6. Carruthers RYM & Kanok techayane H. Pseudomonas aeruginosa endocarditis. AM. J. Med. 1973; 55:811-818.

A quick reference guide for hypertension

(WHO — EMRO)

Definition
Blood pressure sustained above 140/90 after repeated measurement

Classification
* hypertension with no risk factors and no organ damage
* hypertension with risk factors alone
* hypertension with organ damage
* hypertension with risk factors and organ damage

Measurement of blood pressure
Sitting or supine, repeated twice after 3 minutes if initially≥140/90

Note. Observers require training.

High risk groups
* smokers
* diabetes mellitus
* elderly
* hyperlipidaemia
* previous myocardial infarction
* evidence of organ damage
* family history

Minimum data set for clinical assessment of hypertension

History
* presenting complaints and duration
* previous history of myocardial infarction, stroke, diabetes, renal disease and peripheral vascular disease
* family history of hypertension, myocardial infarction, stroke, diabetes and peripheral vascular disease
* drug history, e.g., use of non-steroidal anti-inflammatory drugs, oral contraceptives, corticosteroids
* previous therapies/previous adverse reactions to drugs
* risk behaviour, such as smoking

Physical examination
* to look for signs of secondary hypertension such as:
  - Cushing syndrome yes/no
  - polycystic kidney yes/no
  - renal artery stenosis yes/no
  - phaeochromocytoma yes/no
  - coarctation yes/no
* to look for signs of organ damage such as:
  - left ventricular hypertrophy and failure (displaced apical impulse, gallop, rales) yes/no
  - retinal changes yes/no, if yes specify
  - peripheral pulses reduced yes/no
  - peripheral pulses synchronous yes/no
  - cerebrovascular disease yes/no

Laboratory tests
* urine analysis
* blood glucose
* ECG (SV_1+RV_5 or RV_6)
* serum creatinine or blood urea nitrogen
* haematocrit
* serum potassium and sodium
* serum cholesterol

Target blood pressure To achieve the maximum tolerated reduction in blood pressure≤140/90

Management

Nonpharmacological
* reduce fat intake
* reduce salt (do not add)
* reduce weight (if obese)
* reduce alcohol

	* take regular dynamic exercise (e.g. walking) * avoid tobacco
	Pharmacological * diuretic or ß-blockers as first line unless contraindicated * ACE inhibitors especially in diabetes with incipient nephropathy * calcium channel blockers, α-blockers * others
	Note. The choice of drug is influenced by associated disease, risk factors or organ damage.
Education	Public * raising awareness * change in attitudes and lifestyle
	People with hypertension * compliance with regimen
	Note. Adequate time should be given to each patient during consultation
	Doctors and nurses (including continuing education) * blood pressure measurement * levels of hypertension to treat
Indicators (audit)	* %≥ 140/90 on treatment, ≥160/100,≥180/110,≥200/120 * % with complete data set * % team trained in blood pressure measurement * % lost to follow up * % with complete medical records

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