>> TECHNICAL NOTE

Right Sided Infective Endocarditis (RSIE) Disease State Fact Sheet

Hard Facts – A new call to action: [1,2,3,5]

- Annual incidence of Infective Endocarditis (IE) ranging from 3 to 7 per 100,000 person-years[5]
- Annually, National Hospital Discharge Survey Database (NHDS) captures ~270,000 inpatient stays in 500 hospitals across the country (2007 data)[3]
- Globally, in 2010, IE was associated with 1.58 million disability-adjusted life-years or years of healthy life lost as a result of death and nonfatal illness or impairment[5]
- Patients with IE have a risk for recurrence and increased mortality rate[2,5]
- Right-sided IE (RSIE) encompasses 5-10% of IE occurrences[4]
- Majority of RSIE cases involve the Tricuspid Valve (TV), pulmonic valve involvement accounting for less than 10% of all right-sided cases[4]
- Intravenous drug users constitutes ~30-40% of RSIE (TV)[4]
- Overall mortality for RSIE is between 5 – 15%[4]
- Dominant infective organism is Staphylococcus Aureus, in most series accounting for around 70% of RSIE[1]

Risk Factors: [4]

- Intravenous drug use[4]
- Cardiac implantable electronic device (CIED) infection[4]
- Indwelling lines (hemodialysis, parenteral nutrition, and chemotherapy)[4]
- Uncorrected congenital heart disease[4]

Symptoms: [4]

- Persistent fever[4]
- Bacteremia[4]
- Multiple septic pulmonary emboli causing chest pain and cough[4]

Diagnosis: [1,2,4]

- Blood culture (Microbiological diagnosis)[2]

Note:[1,4]
Duke criteria *(positive blood culture and oscillating intracardiac mass on Echocardiogram[1])* is the gold standard for diagnosing IE[4].

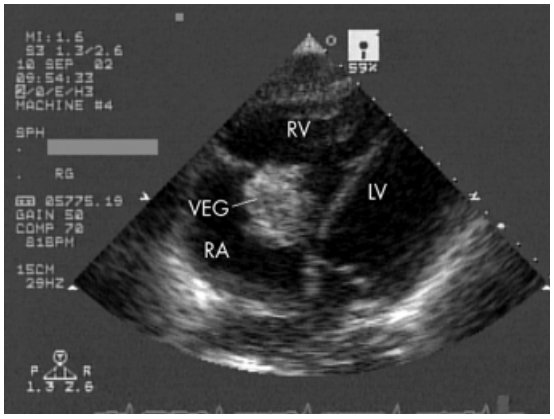

Figure 1: Echocardiographic image of a large vegetation, approximately 4cm in diameter, attached to the Tricuspid valve[1] (reproduced from Moss et al.)

- Transthoracic echocardiography, transesophageal echocardiography, and Chest x-ray[1]

Treatment: [1,4]

- **Antibiotics**[4]

a) Therapy should depend on the causative microorganism and its sensitivity[4]

b) Choice and duration of antibiotic therapy should be guided by an infectious disease expert[4]

- Surgery: 5-16% of RSIE cases eventually require surgical intervention[4]. Surgery is considered under the following circumstances:

a) TV vegetations greater than 20 mm with recurrent septic pulmonary emboli with or without concomitant right heart failure[4]

b) IE caused by microorganisms that are difficult to eradicate (e.g., fungi) despite adequate antimicrobial therapy[4]

c) Paravalvular abscess[1]

d) Right heart failure secondary to severe TR with poor response to diuretic therapy[4]

REFERENCES

1. Moss, R., & Munt, B. (2003). Injection drug use and right sided endocarditis. Heart, 89, 577-581.
2. Habib, G. (2015). 2015 ESC Guidelines for the management of infective endocarditis. European Heart Journal, 36(10), 3075-3123
3. Cooper, H.; Brady, JE (2007). Nationwide Increase in the Number of Hospitalizations for Illicit Injection Drug Use–Related Infective Endocarditis. Clin Infect Dis, 45(9), 1200-1203.
4. Hussain ST, Witten J (2017). Tricuspid Valve Endocarditis. Ann Cardiothoracic Surg, 6 (3), 255-261.
5. Baddour, ML. (2015). Infective Endocarditis in Adults: Diagnosis, Antimicrobial Therapy, and Management of Complications A Scientific Statement for Healthcare Professionals from the American Heart Association. Circulation, 132(15), 1435- 1486.

Important Risk Information:

Refer to directions for use provided with the device for Indications for use, Contraindications, Warnings and Precautions.

CANNULA INDICATIONS FOR USE: The AngioVac Cannula is indicated for use as a venous drainage cannula during extracorporeal bypass and for removal of fresh, soft thrombi or emboli during extracorporeal bypass for up to six hours.

CIRCUIT INDICATIONS FOR USE: The AngioVac Circuit is indicated for use in procedures requiring extracorporeal circulatory support for periods of up to six hours.

CONTRAINDICATION: Do not use if the patient has severe arterial or venous vascular disease. The device is contraindicated in the removal of chronic firmly adherent intravascular material (e.g., atherosclerotic plaque, chronic pulmonary embolism). The device is contraindicated for use in the right heart or pulmonary arteries during active cardiopulmonary resuscitation.

WARNING: Selection of the patient as a candidate for use with this device and for such procedures as it is intended is the physicians' sole responsibility. The outcome is dependent on many variables including, patient pathology, surgical procedure, and perfusion procedure/technique.

For single patient use only. Do not reuse, reprocess or resterilize. Reuse, reprocessing or resterilizing may compromise the structural integrity of the device and/or lead to device failure which, in turn, may result in patient injury, illness or death. Reuse, reprocessing or resterilizing may also create a risk of contamination of the device and/or cause patient infection or cross-infection, including, but not limited to, the transmission of infectious disease(s) from one patient to another. Contamination of the device may lead to injury, illness or death of the patient.

CAUTION: Federal law (USA) restricts this device to sale by or on the order of a physician.

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