

MEDIA RELEASE

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NUHCS CARDIOLOGISTS EMBARKED ON WORLDWIDE STUDY ON INFECTIVE ENDOCARDITIS

ESC-EORP EURO-ENDO registry records patient data from the largest cohort of patients admitted to hospitals in Europe and Non-Europe countries to study culture-negative and culture-positive infective endocarditis

Singapore – A group of cardiologists from the National University Heart Centre, Singapore (NUHCS) have found that the one-year mortality was significantly higher in patients presented with culture-negative infective endocarditis (CNIE) than culture-positive infective endocarditis (CPIE). The difference was present in patients receiving medical treatment alone, and not those who underwent cardiac surgery, with surgery being associated with reduced mortality.

Infective endocarditis (IE) or bacterial endocarditis, is an infection caused by bacteria which enters the bloodstream and remain in the heart lining, a blood vessel or heart valve. While it is an uncommon condition, patients with certain heart conditions have a higher risk of developing IE, which may lead to other heart valve diseases.

The team led by Assistant Professor William Kong, Senior Consultant, Department of Cardiology, NUHCS and NUS Yong Loo Lin School of Medicine, conducted a multi-centres study within the European Society of Cardiology (ESC) – the EURObservational Research Programme (EORP) European Endocarditis (EURO-ENDO) international registry, which records data from the world largest cohort of patients admitted to hospitals in Europe and Non-Europe countries.

Asst Prof Kong shared: “Fatality of IE is high worldwide and its diagnosis remains a challenge for doctors. The present analysis of the EURO-ENDO registry confirmed the mortality of CNIE was higher than CPIE in patients receiving antimicrobial therapy only.”

“Culture negative endocarditis is a tricky condition to treat because it may cause delay diagnosis of endocarditis as the culture is negative. Additional efforts are required to improve the diagnosis of IE and early identification of culture negative endocarditis cases are crucial before its progression to advance disease that may exclude the possibility of surgery,” said Associate Professor Poh Kian Keong, Director of Research and Senior Consultant, Department of Cardiology, NUHCS.

A total of 3,113 patients from 156 centres and 40 countries who were diagnosed with IE during 1 January 2016 to 31 March 2019 were recruited for the study. Of these, 2,590 (83.2%) had CPIE, whereas 523 (16.8%) had CNIE. As many as 1,488 (48.1%)

patients underwent cardiac surgery during the hospitalisation, of which 1,259 (48.8%) were presented with CPIE and 229 (44.5%) with CNIE.

The study has found that about 20% of the patients presented with endocarditis is culture-negative. Clinical characteristics at admission for endocarditis were different between the negative group and positive group patients. The 30-day mortality was found to be higher in the negative group than positive group patients. Among the patients who are qualified for surgery, patients with negative culture were less frequently operated upon than those with positive culture. No difference in one-year survival were observed between the culture-negative group and culture-positive group in the subgroup of surgically treated patients. A lower survival for culture-negative group was observed in the patients receiving medical treatment alone.

With the study outcomes of culture-negative versus culture-positive IE, our cardiologists hope that the physicians treating patients with endocarditis can secure proper cultures at an early stage of the disease and aim to reduce the prevalence of culture-negative infections. By identifying a proper causative organism early, it may potentially modify patients' risk and hopefully improve their outcomes.

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Chinese Glossary

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About National University Heart Centre, Singapore

The National University Heart Centre, Singapore (NUHCS) brings together the resources, expertise and capabilities in the areas of Cardiology, Cardiothoracic and Vascular Surgery to better meet the needs of the growing number of patients with heart disease. A key centre for the treatment and management of complex cardiovascular diseases, its core clinical programmes include heart failure, structural heart disease, acute coronary syndrome, vascular medicine and therapy, women's heart health and heart rhythm.

Comprising a team of cardiovascular specialists and experts from a multitude of medical and surgical disciplines, the NUHCS provides a comprehensive and holistic approach to the treatment of patients with heart problems. This approach is backed by cutting edge knowledge and information gathered by the Cardiovascular Research Institute (CVRI).

The CVRI focuses on developing niche research work in creating new knowledge in support of NUHCS' core clinical programmes by working in close collaboration with both local and international renowned research institutes such as the Agency for Science, Technology and Research (A*STAR) and New Zealand's Christchurch School of Medicine and Health Sciences.

Partnerships are formed with various medical institutes as NUHCS is a selected training centre for international physicians. Education and training ensures that our medical professionals are kept abreast. Nurturing the next generation, our specialists are also actively involved in conducting workshops and teaching programmes for our medical undergraduates.

For more information, visit: <https://www.nuhcs.com.sg>.

About the National University Health System (NUHS)

The National University Health System (NUHS) aims to transform how illness is prevented and managed by discovering causes of disease, development of more effective treatments through collaborative multidisciplinary research and clinical trials, and creation of better technologies and care delivery systems in partnership with others who share the same values and vision.

Institutions in the NUHS Group include the National University Hospital, Ng Teng Fong General Hospital, Jurong Community Hospital and Alexandra Hospital; three National Specialty Centres - National University Cancer Institute, Singapore (NCIS), National University Heart Centre, Singapore (NUHCS) and National University Centre for Oral Health, Singapore (NUCOHS); the National University Polyclinics (NUP); Jurong Medical Centre; and three NUS health sciences schools – NUS Yong Loo Lin School of Medicine (including the Alice Lee Centre for Nursing Studies), NUS Faculty of Dentistry and NUS Saw Swee Hock School of Public Health.

With member institutions under a common governance structure, NUHS creates synergies for the advancement of health by integrating patient care, health science education and biomedical research.

As a Regional Health System, NUHS works closely with health and social care partners across Singapore to develop and implement programmes that contribute to a healthy and engaged population in the Western part of Singapore.

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