INTISARI

IDENTIFIKASI PROFIL BAKTERI ANAEROB FAKULTATIF PADA PERMUKAAN LANTAI ICU RUMAH SAKIT SWASTA DI YOGYAKARTA DENGAN METODE AMPLICON SEQUENCING

Latar Belakang: Permukaan lantai rumah sakit sering dianggap bukan merupakan sumber transmisi dari bakteri patogen, hal ini dikarenakan lantai rumah sakit jarang sekali tersentuh oleh tangan. Padahal, permukaan lantai rumah sakit itu terdapat berbagai jenis bakteri patogen termasuk diantaranya bakteri anaerob. Bakteri ini kemungkinan besar dapat menginfeksi manusia sehingga sangat berpotensi menyebabkan terjadinya infeksi nosokomial. Oleh karena itu, identifikasi bakteri anaerob di permukaan lantai sangat penting untuk dilakukan. Identifikasi pada bakteri yang independen terhadap kultur dapat dilakukan menggunakan pendekatan metagenomik dengan amplicon sequencing 16s rRNA. Metode ini akan memberikan hasil yang lebih luas cakupannya dan akan lebih informatif dibandingkan metode lain seperti kultur tradisional.

Tujuan: Untuk mengidentifikasi profil bakteri anaerob fakultatif dari isolat permukaan lantai di ruang ICU Rumah Sakit Swasta di Yogyakarta.

Metode: Penelitian ini merupakan penelitian yang menggunakan desain penelitian deskriptif laboratoris. Sampel akan diambil dari usapan permukaan lantai dengan luas 1 x 1 m2 di ruang ICU Rumah Sakit Swasta di Yogyakarta. Kemudian sampel akan dikirim ke laboratorium untuk diproses lebih lanjut menggunakan metode ampliqon sequencing 16s rRNA.

Hasil: Pada penelitian ini, didapatkan lima bakteri anaerob fakultatif yang teridentifikasi pada level spesies pada sampel lantai yakni *Staphylococcus aureus group* (14,32%), *Paracoccus denitrificans group* (9,98%), *Staphylococcus saprophyticus group* (6,61%), *Pseudomonas stutzeri group* (2,86%) dan *Enhydrobacter aerosaccus group* (2,39%).

Kesimpulan: Penelitian ini menunjukkan adanya keberagaman bakteri yang berada pada permukaan lantai dengan beberapa bakteri anaerob fakultatif yang dominan meliputi *Paracoccus denitrificans group, Staphylococcus aureus group, Enhydrobacter aerosaccus group, Staphylococcus saprophyticus group,* dan *Pseudomonas stutzeri group*.

Kata Kunci: bakteri anaerob, fakultaif, patogen, lantai rumah sakit, ICU, amplicon sequencing, 16S rRNA, metagenomik, infeksi nosokomial

ABSTRACT

IDENTIFICATION OF FACULTATIVE ANAEROBIC BACTERIA PROFILE ON THE SURFACE OF THE ICU FLOOR OF PRIVATE HOSPITAL IN YOGYAKARTA USING AMPLICON SEQUENCING METHOD

Background: Hospital floor surfaces are often considered not a source of transmission of pathogenic bacteria, this is because hospital floors are rarely touched by hands. In fact, the floor surface of the hospital contains various types of pathogenic bacteria including anerob bacteria. This bacterium is likely to infect humans so that it has the potential to cause nosocomial infections. Therefore, the identification of anaerobic bacteria on the floor surface is very important to do. Identification of culture- independent bacteria can be done using a metagenomic approach with amplicon sequencing of 16s rRNA. This method will provide results that are broader in scope and will be more informative than other methods such as traditional culture.

Objectives: To identify facultative anaerobic bacteria profiles from floor surface isolates in the ICU room of Private Hospital Yogyakarta.

Methods: This research is a research that uses a laboratory descriptive research design. Samples will be taken from a floor surface swab with an area of 1 x 1 m2 in the ICU room of Private Hospital Yogyakarta. Then the sample will be sent to the laboratory for further processing using the metagenomic method of ampliqon sequencing 16s rRNA.

Results: In this study, five facultative anaerobic bacteria were identified at the species level in floor samples, namely *Staphylococcus aureus group* (14,32%), *Paracoccus denitrificans group* (9,98%), *Staphylococcus saprophyticus group* (6,61%), *Pseudomonas stutzeri group* (2,86%) and *Enhydrobacter aerosaccus group* (2,39%).

Conclusion: On the floor surface in the ICU of a Private Hospital in Yogyakarta, a facultative anaerobic bacteria profile was obtained with the dominant bacterial subspecies being pathogenic bacteria with a proportion of more than one percent and environmental bacteria less than one percent in samples that had been carried out bioinformatics analysis using EzBioCloud at the species level were *Staphylococcus aureus group, Paracoccus denitrificans group, Staphylococcus saprophyticus group, Pseudomonas stutzeri group* and *Enhydrobacter aerosaccus group*.

Keywords: anaerobic bacteria, facultative, pathogen, hospital floor, ICU, amplicon sequencing, 16S rRNA, metaginomic, nosocomial infection