

Efektivitas Vaporized Hydrogen Peroxide di Departemen THT-KL FKUI RSCM untuk Sterilisasi Instrumen Medis Rawat Jalan = Effectivity of Vaporized Hydrogen Peroxide for Sterilization of Outpatient Medical Instruments in Department of ENT-HNS RSCM-FKUI

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Abstrak

Latar belakang: Sterilisasi merupakan proses menghancurkan mikroba yang dapat dilakukan melalui proses fisik atau kimia. Vaporized hydrogen peroxide (VHP) merupakan teknologi sterilisasi cepat dengan menggunakan hidrogen peroksida (H_2O_2) yang bersifat antimikroba berspektrum luas. Alat ini tidak menghasilkan produk sampingan berbahaya, relatif murah, tersedia secara luas dan mudah digunakan.

Tujuan: Penelitian ini dilakukan untuk mengevaluasi efektivitas VHP Departemen THT-KL RSCM-FKUI untuk sterilisasi instrumen medis pemeriksaan fisik THT-KL.

Metode: Penelitian eksperimental ini dilakukan di Departemen THT-KL, Departemen Mikrobiologi, dan RSUPN Dr. Cipto Mangunkusumo. Sampel pada penelitian ini adalah corong telinga, spekulum hidung, dan spatel lidah yang telah digunakan di unit rawat jalan dan belum disterilisasi. Instrumen medis yang telah berkontak dengan pasien ditempelkan pada media kontak agar dan kemudian disterilisasi dengan VHP dengan durasi 30 menit, 60 menit, dan 90 menit. Selanjutnya, dilakukan penilaian terhadap jumlah mikroorganisme pada pasca sterilisasi. Uji statistik dilakukan untuk melihat perbandingan rerata jumlah koloni pra- dan pasca-sterilisasi, serta hubungan antara durasi sterilisasi dengan efektivitas sterilisasi. Hasil: Terdapat total 27 sampel yang dilibatkan dalam penelitian ini. Pada durasi sterilisasi 30 menit, 3 dari 9 sampel (33,3%) memiliki sisa mikroorganisme pasca sterilisasi. Pada durasi sterilisasi 60 menit dan 90 menit, seluruh sampel pasca sterilisasi ditemukan steril. Dari hasil analisis statistik, ditemukan perbedaan rerata jumlah koloni yang bermakna antara sebelum dan sesudah sterilisasi pada durasi 30 menit ($p=0,000$), 60 menit ($p=0,008$) dan 90 menit ($p=0,008$). Sementara itu, tidak terdapat hubungan bermakna antara durasi sterilisasi dengan efektivitas sterilisasi.

Kesimpulan: Metode sterilisasi instrumen medis dengan VHP terbukti efektif pada durasi 30 menit, 60 menit, maupun 90 menit. Jenis mikroorganisme yang belum mati pada sebagian sampel durasi sterilisasi 30 menit adalah *Staphylococcus epidermidis* dan *Bacillus* sp.

.....Background: Sterilization is a process of destroying microbes which can be done through physical or chemical means. Vaporized hydrogen peroxide (VHP) is a rapid sterilization method which involves the use of hydrogen peroxide (H_2O_2) with its broad-spectrum antimicrobial property. This method does not produce harmful side products, is relatively cheap, widely available and easy to use.

Objective: This study was conducted to evaluate the effectivity of VHP for the sterilization of medical instruments in Department of ENT-HNS RSCM-FKUI.

Method: This experimental study was conducted in Department of ENT-HNS and Department of Microbiology RSCM-FKUI. Sample included ear speculum, nose speculum and tongue spatula which have been used in the outpatient clinic and have not been sterilized. Medical instruments that have been in contact with patients were affixed to agar contact medium and were sterilized with VHP in 30 minutes, 60 minutes

and 90 minutes. The number of microorganisms post-sterilization was also calculated. Statistical analysis was done with the aim of finding the difference between the number of colonies before and after sterilization and the association between sterilization duration and effectivity.

Results: A total of 27 samples were involved in this research. With sterilization duration of 30 minutes, 3 out of 9 samples (33,3%) had remaining microorganisms after sterilization. With sterilization duration of 60 minutes and 90 minutes, all post-sterilization samples were sterile. From statistical analysis, there were significant differences between the number of colonies after and before sterilization in 30 minutes ($p=0,000$), 60 minutes ($p=0,008$) and 90 minutes ($p=0,008$) duration. Meanwhile, there was no significant association between duration of sterilization and its effectivity.

Conclusion: VHP sterilization method of medical instruments were effective in 30 minutes, 60 minutes and 90 minutes duration. The types of microorganisms remaining in several samples post 30 minutes sterilization were *Staphylococcus epidermidis* dan *Bacillus* sp.