Daya antibakteri dari larutan ekstrak teh hijau 6 dan klorheksidin 2 terhadap enterococcus faecalis dalam biofilm eksperimen laboratorik = Antibacterial efficacy of 6 green tea extract and 2 chlorhexidin againts enterococcus faecalis biofilm laboratory experiment

Fitri Reflan, author

Abstrak

[ABSTRAK
Latar Belakang: Enterococcus Faecalis merupakan bakteri yang sering ditemukan pada kegagalan perawatan saluran akar. Hal ini berhubungan dengan sifat resistensi dari E.faecalis terhadap antibakteri. Klorheksidin 2 % merupakan bahan irigasi yang terbukti efektif dalam menghilangkan bakteri Enterococcus faecalis (E.faecalis), akan tetapi klorheksidin memiliki toksisitas terhadap sel tertentu. Teh hijau merupakan salah satu bahan alami yang banyak dikonsumsi di dunia termasuk di Indonesia. Ekstrak teh hijau terbukti memiliki daya antibakteri terhadap E.faecalis. Namun belum banyak penelitian yang meneliti daya antibakteri dari ekstrak teh hijau dan klorheksidin 2% terhadap E.faecalis dalam biofilm dengan menggunakan metode Real-time PCR.

Tujuan: Membandingkan daya antibakteri ekstrak teh hijaudengan klorheksidin 2 % terhadapEnterococcus faecalisdalam biofilm. Metode: koloni E. faecalis ATCC 29212 di kumpulkan dengan loop dari biakan 1 malam E.faecalis di BHI agar, lalu dimasukkan kedalam 10 ml saline steril. Densitas dari suspensi di standarisasi dengan 0.5 McFarland untuk mendapatkan jumlah 10 8 CFU/ml. 50 μl suspensi bakteri diokulasi pada membran filter nitrat selulosa yang diletakkan pada permukaan agar lalu inkubasi selama 3 hari untuk membentuk biofilm, Larutanekstrak teh hijau, CHX 2 % dan kontrol dimasukkan kedalam tabung uji. biofilmE. faecalisdi membran nitrat selulosa dimasukkan ke dalam tabung uji dan paparkan masing masing bahan uji. Semua tabung lalu dimasukkan ke dalam inkubator dengan suhu 37 °C selama 10 menit. Kemudian dilakukan penghitungan jumlah E.faecalis yang hidup dengan menggunakan Real-time PCR.

Hasil: Terdapat perbedaan bermaknadiantara kelompok ekstrak teh hijau, klorheksidin 2 %,dan kontrol. Kesimpulan:Esktrak teh hijau memiliki daya antibakteri terhadap E.faecalis dalam biofilm, namun tidak seefektif klorheksidin 2%.
<hr>
ABSTRACT
Background:Enterococcus faecalis is most commonly isolated bacteria in failed root canal treatment. This is due with resistency of E. faecalis to antimicrobial agent. 2% chlorhexidin is proven to be effecive against Enterococcus faecalis (E.faecalis). However chlorhexidin is known to have toxicity againts several particular cells. Green tea is one of the most widely narutal comsumed beverage in the world, also in Indonesia. Green tea extract is proven to have antibacterial efficacy against E.faecalis,but not many research has investigated green tea extract and chlorhexidin 2% antibacterial efficacy againtsE.faecalis biofilm by using real-time PCR method. Aim. To compare antibacterial efficacy of green tea extract solution with chlorhexidin 2 % againts E.faecalis biofilm.

Methods : E. faecalis ATCC 29212 colonies collected from overnight culture of bacterial grown on BHI agar plate. The density of the suspension was standardized by comparison with 0,5 Mcfarland Standar to give an approximate count of 108 CFU/ml. Aliquos (50μl) bacterial suspension were then inoculated on steril disks place on the surface of BHI agar and incubated at 37°C for 72 h aerobically. After 72 h of incubation, the discs were removed and transferred into 10 ml PBS to loose attached bacterial. Then the disks were transferred to 10 ml of green tea extract solution, chlorhexidin 2% and PBS steril as control then exposed for 10 minutes in an aerobic incubator at 37 °C.thenall living E. faecalis cells was quantified by using Real-time PCR methods.

Results : There were significant differences statistically between green tea extract, chlorhexidin 2 % and control groups.Conclusion.Green tea extract was effective againts E.faecalis biofilm butnot as effective as chlorhexidin 2%., Background:Enterococcus faecalis is most commonly isolated bacteria in failed root canal treatment. This is due with resistency of E. faecalis to antimicrobial agent. 2% chlorhexidin is proven to be effecive against Enterococcus faecalis (E.faecalis). However chlorhexidin is known to have toxicity againts several particular cells. Green tea is one of the most widely narutal comsumed beverage in the world, also in Indonesia. Green tea extract is proven to have antibacterial efficacy against E.faecalis,but not many research has investigated green tea extract and chlorhexidin 2% antibacterial efficacy againtsE.faecalis biofilm by using real-time PCR method.Aim.To compare antibacterial efficacy of green tea extract solution with chlorhexidin 2 % againts E.faecalis biofilm.Methods :E. faecalis ATCC 29212 colonies collected from overnight culture of bacterial grown on BHI agar plate. The density of the suspension was standardized by comparison with 0,5 Mcfarland Standar to give an approximate count of 108 CFU/ml. Aliquos (50μl) bacterial suspension were then inoculated on steril disks place on the surface of BHI agar and incubated at 37°C for 72 h aerobically. After 72 h of incubation, the discs were removed and transferred into 10 ml PBS to loose attached bacterial. Then the disks were transferred to 10 ml of green tea extract solution, chlorhexidin 2% and PBS steril as control then exposed for 10 minutes in an aerobic incubator at 37 °C.thenall living E. faecalis cells was quantified by using Real-time PCR methods.Results. There were significant differences statistically between green tea extract, chlorhexidin 2 % and control groups.Conclusion.Green tea extract was effective againts E.faecalis biofilm butnot as effective as chlorhexidin 2%.]