

## PENGARUH LARUTAN GARAM KRAYAN TERHADAP PERTUMBUHAN STREPTOCOCCUS ALPHA HASIL ISOLASI CAIRAN SULKUS GINGIVA DARI ANAK PENDERITA GINGIVITIS RINGAN (KAJIAN IN VITRO)

### INTISARI

**Latar belakang:** Gingivitis adalah penyakit periodontal yang paling sering terjadi pada anak-anak. Salah satu penyebab gingivitis pada anak adalah bakteri plak grup Streptococcus alpha. Bakteri ini ditemukan pada daerah supragingival dan subgingival. Senyawa antibakteri digunakan untuk mengurangi jumlah bakteri patogen dalam rongga mulut. Garam merupakan salah satu bahan alami yang memiliki sifat antibakteri. Tujuan dari penelitian ini adalah untuk mengetahui pengaruh larutan garam Krayan terhadap pertumbuhan Streptococcus alpha hasil isolasi cairan sulkus gingiva dari anak penderita gingivitis ringan yang dilakukan secara *in vitro*.

**Metode penelitian:** Jenis penelitian ini adalah eksperimental laboratoris. Streptococcus alpha diisolasi dari cairan sulkus gingiva anak penderita gingivitis ringan. Garam Krayan berasal dari pegunungan Krayan Kalimantan Utara. Konsentrasi larutan garam Krayan adalah 20%, 25%, 30%, 35%, 40%. Kemampuan larutan garam Krayan menghambat pertumbuhan bakteri ditentukan dengan mengukur zona hambat disekitar sumuran yang berisi larutan uji pada media *Mueller Hinton Agar* (MHA) yang ditambahkan agar darah domba. Data hasil penelitian diuji dengan uji statistik *One Way Anova*.

**Hasil penelitian:** Hasil penelitian menunjukkan larutan garam Krayan konsentrasi 20% memiliki diameter zona hambat sebesar  $12.380 \pm .22550$ mm, konsentrasi 25% sebesar  $13.568 \pm .11122$ , konsentrasi 30% sebesar  $14.578 \pm .12337$ , konsentrasi 35% sebesar  $19.400 \pm .12550$  dan konsentrasi 40% sebesar  $21.130 \pm .04743$ mm. Hasil uji statistik menunjukkan adanya perbedaan signifikan antar seluruh kelompok perlakuan.

**Kesimpulan:** Kesimpulan dari penelitian ini adalah larutan garam Krayan memiliki pengaruh menghambat pertumbuhan bakteri Streptococcus alpha hasil isolasi cairan sulkus gingiva dari anak penderita gingivitis ringan. Semakin besar konsentrasi larutan garam Krayan yang digunakan semakin besar hambatan pertumbuhan Streptococcus alpha hasil isolasi cairan sulkus gingiva dari anak penderita gingivitis ringan.

**Kata kunci:** Garam Krayan, Gingivitis, Streptococcus alpha

## THE EFFECT OF KRAYAN SALT SOLUTION ON THE GROWTH OF ALPHA STREPTOCOCCUS AS RESULTS FROM ISOLATED GINGIVA CREVIKULAR FLUID CHILDREN WITH MILD GINGIVITIS (IN VITRO STUDY)

### ABSTRACT

**Background:** Gingivitis is the most common periodontal disease in children. One of the cause of gingivitis in children is the plaque bacteria group Streptococcus alpha. These bacteria are found in the supragingival and subgingival areas. Antibacterial compounds are used to reduce the number of pathogenic bacteria in the oral cavity. Salt is a natural ingredient that has antibacterial properties. The purpose of this study was to determine the effect of Krayan salt solution on the growth of Streptococcus alpha as a result of isolated gingival crevicular fluid from children with mild gingivitis carried out in vitro.

**Research method:** This research is experimental laboratory. Streptococcus alpha was isolated from the gingival crevicular fluid of a child with mild gingivitis. Krayan salt was taken from the Krayan mountains of North Kalimantan. The concentration of Krayan salt solution is 20%, 25%, 30%, 35%, 40%. The ability of Krayan salt solution to inhibit bacterial growth was determined by measuring the inhibition zone around the well containing test solution on Mueller Hinton Agar (MHA) added with sheep blood agar media. The research data were tested with the One Way Anova statistical test.

**Result:** The results showed that the 20% concentration of Krayan salt solution had an inhibition zone diameter of  $12.380 \pm .22550$ mm, a 25% concentration of  $13,568 \pm .11122$ , a 30% concentration of  $14,578 \pm .12337$ , a 35% concentration of  $19,400 \pm .12550$  and a 40% concentration of  $21.130 \pm .04743$ mm. The results of statistical tests showed significant differences between all treatment groups.

**Conclusion:** Conclusion of this study is that Krayan salt solution has the effect of inhibiting the growth of Streptococcus alpha result from isolated gingival crevicular fluid children with mild gingivitis. The higher the concentration of Krayan salt solution used, the higher antibacterial aptitude against Streptococcus alpha isolated from gingival crevicular fluid children with mild gingivitis.

**Keywords:** Gingivitis, Krayan salt, Streptococcus alpha