

**PENGARUH LUAS FLUORESENSI MERAH PLAK GIGI TERHADAP
pH PLAK DAN LUAS *WHITE SPOT* PADA
GIGI INSISIF PERMANEN ANAK
(Deteksi plak menggunakan sinar *Ultraviolet Light Emitting Diode 400 nm*)**

INTISARI

Plak gigi berfluoresensi merah bila terpapar sinar *ultraviolet*, karena adanya bakteri yang menghasilkan *porfirin* pada plak gigi. Bakteri menghasilkan asam yang berakibat penurunan pH plak dan demineralisasi email gigi. Penelitian ini bertujuan untuk mengetahui pengaruh luas fluoresensi merah plak gigi terhadap pH plak dan luas *white spot* gigi

Penelitian survey analitik dilakukan pada 19 subyek usia 9-11 tahun dengan melakukan pemotretan terhadap gigi insisif permanen rahang atas dan bawah. Pemotretan dilakukan menggunakan kamera DSLR yang dilengkapi dengan sinar *ultraviolet light-emitting diode 400 nm* dan pH plak diukur dengan *pH indicator solution*. *White spot* dipotret setelah gigi dibersihkan dari plak. Luas fluoresensi merah dan luas *white spot* dihitung dengan *Sketch Up* berupa persentase terhadap luas permukaan gigi. Data dianalisis dengan uji korelasi Spearman.

Hasil uji korelasi menunjukkan terdapat pengaruh luas fluoresensi merah plak gigi terhadap pH plak ($r = -0,567$, $p < 0,05$) dan terhadap luas *white spot* ($r = 0,577$, $p < 0,05$) sedangkan korelasi pH plak dengan luas *white spot* ($r = -0,683$, $p < 0,05$) Disimpulkan bahwa terdapat pengaruh luas fluoresensi merah plak gigi terhadap pH plak dan luas *white spot*.

Kata kunci : fluoresensi merah plak gigi, pH plak gigi. *white spot*

**INFLUENCE OF RED FLUORESCENCE AREA OF DENTAL PLAQUE
TO DENTAL PLAQUE pH AND WHITE SPOT SPACES
IN PERMANENT INCISIVUS CHILDREN
(Detection of plaque using 400 nm Ultraviolet Light Emitting Diode)**

ABSTRACT

Dental plaques emits red fluorescence when exposed by ultraviolet light, due to the presence of porphyrin components in bacteria. Bacteria produce acid which decrease in plaque pH and demineralization of tooth enamel. This study aims to determine the correlation red fluorescence of dental plaque to plaque pH and white spot area of the tooth

Analytic survey study was conducted on 19 subjects 9-11 years old by taking pictures of permanent maxillary and lower incisors. Photo taken using a DSLR camera equipped with 400 nm ultraviolet light emitting diode, the plaque pH is measured by a pH indicator solution. The white spot photo is taken after teeth are cleaned of the plaque. The area of red fluorescence and the area of white spot is calculated by Sketch Up in a percentage of tooth surface area. Data were analyzed by Spearman correlation test.

The results showed an influence between the area of red fluorescence and dental plaque pH ($r = -0.567$, $p < 0.05$) and with white spot spaces ($r = 0.577$, $p < 0.05$). Correlation between dental plaque pH and white spot spaces ($r = -0.683$, $p < 0.05$). It was concluded that there was a correlation red fluorescence on dental plaque with pH and white spot area of the tooth.

Keywords: red fluorescence, dental pH plaque, white spot