Kesesuaian Hasil Pemeriksaan Elektroretinografi Full Field antara RET-eval Handheld ERG dan Vision Monitor Monpack One Metrovision: Analisis pada Pasien Normal dan Pasien Diabetik Retinopati = Agreement of Standard Full-Field Electroretinography Results between RET-eval Handheld ERG and Vision Monitor Monpack One Metrovision: Analysis in Normal Adults and Diabetic Retinopathy Patients

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Abstrak

Latar belakang: Pemeriksaan fungsi visual dengan elektroretinografi (ERG) mulai banyak diteliti untuk deteksi DR tahap awal. Alat ERG yang tersedia di RSCM kurang nyaman bagi pasien dan aksesnya terbatas sehingga dipikirkan penggunaan alat lain yang risikonya lebih rendah dan portabel yaitu RETeval. Tujuan: Menilai kesesuaian hasil pemeriksaan elektroretinografi full field antara alat RETeval dibandingkan ERG Monpack. Metode: Studi potong lintang yang membagi subjek ke dalam tiga kelompok yaitu pasien normal, pasien diabetes tanpa DR, dan pasien non-proliferative diabetic retinopathy (NPDR) derajat ringan. Pemeriksaan ERG full-field dilakukan sesuai standar ISCEV pada seluruh pasien. Pengukuran meliputi waktu implisit dan amplitudo skotopik 0,01, skotopik 3,0, skotopik OP, dan fotopik 3-0 flicker. Hasil: Total subjek berjumlah 96 mata. Pada ketiga kelompok, hasil pemeriksaan amplitudo gelombang menggunakan ERG RETeval selalu memperlihatkan angka yang lebih kecil dibandingkan ERG Monpack. Rasio hasil pemeriksaan full field ERG antara RETeval dan Monpack berkisar 1:1 di variabel waktu implisit. Sementara itu, pada kelompok normal didapatkan rasio amplitudo berkisar antara 1:3 sampai dengan 1:6, pada kelompok tanpa diabetik retinopati antara 1:4 sampai dengan 1:7, dan pada kelompok NPDR ringan didapatkan rasio amplitudo antara 1:2,5 sampai dengan 1:10.Tingkat kesesuaian menunjukkan kesesuaian yang buruk (ICC < 0,5) di semua variabel pada ketiga kelompok. Kesimpulan: Tidak didapatkan kesesuaian hasil pemeriksaan ERG full field antara ERG RETeval dan ERG Monpack di seluruh variabel pada ketiga kelompok pemeriksaan.

.....Background: Visual function examination with electroretinography (ERG) is currently being studied for the detection of DR at an early stage. The ERG tool available at RSCM is less comfortable for the patients and has limited access. RETeval is a new ERG tool that offers ease and is portable. Objective: This study aims to assess the agreement of full field electroretinography examination results between the RETeval device compared to the Monpack ERG. Methods: This was a cross-sectional study which divided subjects into three groups, namely normal patients, diabetic patients without DR, and mild non-proliferative diabetic retinopathy (NPDR) patients. Full-field ERG examination was carried out according to ISCEV standards on all patients. Measurements included implicit time and amplitude of scotopic 0.01, scotopic 3.0, scotopic OP, and photopic 3-0 flicker. Results: A total of 96 subjects underwent ERG

examination. Out af all three groups, the results consistently showed smaller wave amplitude using RETeval than Monpack. The ratio of full field ERG examination results between RETeval and Monpack is around 1:1 in the implicit time variable. Meanwhile, in the normal group the amplitude ratio was between 1:3 to 1:6, in the group without diabetic retinopathy between 1:4 to 1:7, and in the mild NPDR group the amplitude ratio between 1:2.5 to 1:10. The study showed poor agreement (ICC < 0.5) in all variables in all three groups. Conclusion: There was poor agreement in the results of the full field ERG examination between the RETeval handheld ERG and the Monpack ERG in all variables in the three examination groups.