

Pengaruh parasentesis, transforming growth factor-B2, dan tumor necrosis factor-a terhadap iridektomi perifer laser untuk penanganan glaukoma primer sudut tertutup akut

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Abstrak

Pendahuluan: Glaukoma primer sudut tertutup akut (GPSTA) adalah penyakit mata yang disebabkan oleh tertutupnya seluruh anyamari trabekulum oleh pangkal iris secara mendadak. GPSTA menyebabkan kebutaan yang bersifat permanen. Penanganan cepat dan segera adalah mutlak untuk mencegah kebutaan. Penatalaksanaan awal adalah menurunkan TIO secepat mungkin dengan pemberian medikamentosa gabungan inisial atau parasentesis yang dilanjutkan dengan Irdektomi Perifer Laser (IPL). Proses inflamasi ras Asia lebih berat dan TGF-B2 dan TNF-a merupakan petanda iskemia dan inflamasi.

Tujuan: (1) Menilai respons parasentesis pada pasien GPSTA; (2) Membandingkan kadar TGF-B2 dan TNF-a humor akuos pasien GPSTA dengan pasien katarak; (3) Menilai efek pemberian deksametason terhadap kadar TGF-B2 dan TNF-a humor akuos pasien GPSTA; (4) Memperhitungkan faktor risiko terhadap suksesnya IPL pada pasien GPSTA.

Bahan dan Cara: Penelitian ini merupakan studi prospektif dengan uji pra-pasca untuk menilai respons parasentesis dan studi komparatif belah lintang untuk membandingkan kadar TGF-B2 dan TNF-a humor akuos pasien GPSTA dengan pasien katarak. Untuk menilai efek deksametason terhadap kadar TGF-B2 dan TNF-a humor akuos dilakukan studi klinis acak terkontrol tersamar ganda. Untuk mencari faktor risiko yang mempengaruhi keberhasilan IPL dilakukan perhitungan bivariat, dilanjutkan regresi logistik. Subjek penelitian adalah semua pasien GPSTA dengan Iama serangan di bawah 1 bulan.

Hasil penelitian analisis pada 45 mata pasien GPSTA yang menjalani parasentesis, TIO awal turun. Kadar TGF-B2 dan TNF-a humor akuos pasien GPSTA, masing-masing, 4 kali dan 3 kali dari pasien katarak. Setelah IPL dan randomisasi antara kelompok kontrol dan deksametason, deksametason menurunkan kadar TGF-B2 dan TNF-a pasien GPSTA secara tidak signifikan. Faktor risiko yang mempengaruhi keberhasilan IPL adalah respons TIO pascaparasentesis dan luas SAP. Inflamasi tidak berpengaruh terhadap IPL, tetapi sekele yang diakibatkannya mempengaruhi tindakan tersebut, yaitu SAP. Selain itu, faktor respons terhadap tindakan parasentesis juga turut berperan secara signifikan.

Kesimpulan: Tindakan parasentesis menurunkan TIO awal pasien GPSTA. Kadar TGF-B2 dan TNF-a humor akuos tinggi pada pasien GPSTA. Pengaruh deksametason menurunkan kadar TGF-B2 dan TNF-a secara tidak signifikan. Keberhasilan tindakan IPL adalah 95% pada pasien GPSTA yang mempunyai respons baik terhadap parasentesis dengan luas SAP di bawah 4 jam. Sebaliknya, bila pasien GPSTA tidak memberi respons baik pascaparasentesis dan luas SAP 9-12 jam, maka keberhasilan IPL hanya 5%.

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Introduction: Acute primary angle closure glaucoma (APACG) is an eye disease caused by sudden closure

of trabecular meshwork by the iris root. APACG could cause permanent blindness. Rapid management was essential in preventing blindness. Early management of this disease was done by reducing IOP as quickly as possible by the administration of initial combined medications or paracentesis, followed by laser peripheral iridectomy. Inflammatory process in the Asian race was more severe and TGF- β 2 and TNF- α constituted the signs of ischemia and inflammation.

Objective: (1) To evaluate the response to paracentesis in APACG patients; (2) to compare the TGF- β 2 and TNF- α levels of aqueous humor in APACG patients and cataract patients; (3) to analyze the effects of the administration of dexamethasone on the TGF- β 2 and TNF- α levels of aqueous humor in APACG patients; (4) to calculate the risk factors against the success of laser peripheral iridectomy in APACG patients.

Material and methods: This study was a prospective study with pre-post tests design to evaluate the response to paracentesis. Cross-sectional comparative study was performed to compare the TGF- β 2 and TNF- α levels of aqueous humor in APACG patients and cataract patients. To evaluate the effects of dexamethasone on the TGF- β 2 and TNF- α levels of aqueous humor, a double-mask, randomized controlled trial was performed. To identify the risk factors affecting the success of laser peripheral iridectomy, a bivariate calculation was done, followed by logistic regression calculation. The subjects of the study were all APACG patients with the duration of attack under one month.

Results: Analysis in 45 eyes of APACG patients undergoing paracentesis showed that early IOP decreased by 49%. The TGF- β 2 and TNF- α levels of aqueous humor in APACG patients were four and three times as high as those in cataract patients respectively. After laser peripheral iridectomy and randomization between the control group and dexamethasone group, it showed that dexamethasone reduced the TGF- β 2 and TNF- α levels of APACG patients insignificantly. The risk factors affecting the success of laser peripheral iridectomy was the response to IOP after paracentesis and the size of peripheral anterior synechiae (PAS). Inflammation did not affect laser peripheral iridectomy; however, the sequelae that it caused affected the intervention, i.e. PAS. In addition, the response factor to paracentesis also played a significant role.

Conclusion: Paracentesis could reduce early IOP in APACG patients. The TGF- β 2 and TNF- α levels of aqueous humor were high in APACG patients. The effect of dexamethasone in reducing the TGF- β 2 and TNF- α levels was not significant. The success rate of laser peripheral iridectomy was 95% in APACG patients with good response to paracentesis with the size of PAS under 4 hours. By contrast, if APACG patients did not give a good response to paracentesis and the size of PAS was 9-12 hours, the success rate of laser peripheral iridectomy was only 5%.