

## MO-08

### Management of methanol-induced toxic optic neuropathy with high dose corticosteroid and hyperbaric oxygen therapy

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**Objective:** This study aims to report a case of the novel management of hyperbaric oxygen therapy in treating methanol-induced toxic optic neuropathy (TON).

**Case Report:** A 35-year-old male patient was admitted to the Emergency Unit of Sanglah General Hospital with blurred vision. He had history of alcohol consumption five days ago. The approximate volume of alcohol consumed was about three bottles ( $\pm 2.000$  ml). The ophthalmologic examination found that the visual acuity for both eyes was no light perception (NLP), 7 mm of pupil dilatation, and no pupillary response to light. Fundoscopy examination revealed round and firm optic nerve papillary, cup to disc ratio was around 0.3, 2:3 artery and vein ratio, flame-shaped hemorrhage on the left eye, and negative macular reflex. Patient was diagnosed with ODS Toxic optic neuropathy et causa methanol. Patient hospitalized and treated with 4 x 500 mg methylprednisolone injection for 3 days as the basic therapy. The patient underwent once daily hyperbaric therapy in the course of five days, using 100% oxygen in 2.4 ATA pressure for 3 sessions of 30 minutes, with 5 minutes rest period between each session based on Kindwall table. After almost two months follow-up, the visual acuity of the right eye was 6/6 and 6/20 for the left eye, no improvement with pinhole for both eyes. Fundoscopy examination showed round and firm optic nerve papilla, cup to disc ratio was approximately 0.6-0.7, and positive macula reflex. However, his retinal nerve fiber layers (RNFL) on both eyes were thinner.

**Conclusions:** The combination of high-dose steroid followed by oral steroid with hyperbaric oxygen therapy can improve visual acuity. It could be an alternative adjunct therapy for the management of methanol-induced TON.

**References:** (1) Ranche JM, Cruz RD, Inocencio FP. Methanol-induced Bilateral Optic Neuropathy. *Philippine Journal of Ophthalmology*. 2004; 29: 189-192. (2) Koehrer P, Creuzot-Garcher C, Bron AM. Methanol poisoning: two case studies of blindness in Indonesia. *International Ophthalmology*. 2011; 31(6): 517-524. (3) Triningrat AAMP, Rahayu NMK, Manuaba, IBP. Visual acuity of Methanol Intoxicated Patients before and after Hemodialysis, Methylprednisolone and Prednisone Therapy. *Jurnal Oftalmologi Indonesia*. 2010; 7(4):129-132. (4) Butler FK, Hagan C, Murphy-Lavoie H. Hyperbaric oxygen therapy and the eye. *Undersea Hyperbaric Medical Journal*. 2008; 35(5): 333-387. (5) Oguz H, Sobaci G. The Use of Hyperbaric Oxygen Therapy in Ophthalmology. *Survey of Ophthalmology*. 2008; 53(2): 112-120.