

Tracheal stimulation

By preventing [hypoxia](#) and [hypercapnia](#), advanced [airway management](#) can save lives among patients with [traumatic brain injury](#). During [endotracheal intubation](#) (ETI), [tracheal stimulation](#) causes an increase in [intracranial pressure](#) (ICP), which may impair brain [perfusion](#). It has been suggested that intravenous [lidocaine](#) might attenuate this ICP response. Maissan et al. hypothesized that adding lidocaine to the standard [induction](#) medication for [general anesthesia](#) might reduce the ICP response to ETI. They measured the [optic nerve sheath diameter](#) (ONSD) as a correlate of ICP and evaluated the effect of intravenous lidocaine on ONSD during and after ETI in patients undergoing [anesthesia](#).

This double-[blinded](#), [randomized placebo-controlled study](#) included 60 patients with American Society of Anesthesiologists I or II physical status that were scheduled for elective surgery under general anesthesia. In addition to the standard anesthesia medication, 30 subjects received 1.5 mg/kg 1% lidocaine (0.15 ml/kg, ONSDlidocaine) and 30 received 0.15 ml/kg 0.9% NaCl (ONSDplacebo). ONSDs were measured with ultrasound on the left eye, before (T0), during (T1), and 4 times after ETI (T2-5 at 5-min intervals).

Compared to [placebo](#), [lidocaine](#) did not significantly affect the baseline ONSD after anesthesia induction measured at T0. During ETI, the ONSDlidocaine was significantly smaller ($\beta=-0.24$ mm $P=0.022$) than the ONSDplacebo. At T4 and T5, the ONSDplacebo increased steadily, up to 20 min after ETI, but the ONSDlidocaine tended to return to baseline levels.

Maissan et al. found that the [optic nerve sheath diameter](#) was distended during and after [endotracheal intubation](#) (ETI) in anesthetized patients, and intravenous [lidocaine](#) attenuated this effect ¹⁾.

¹⁾

Maissan IM, Hollestelle RV, Rijs K, Jaspers S, Hoeks S, Haitisma IK, den Hartog D, Stolker RJ. Intravenous lidocaine attenuates distention of the optical nerve sheath, a correlate of intracranial pressure, during endotracheal intubation. *Minerva Anesthesiol.* 2022 Oct 26. doi: 10.23736/S0375-9393.22.16574-0. Epub ahead of print. PMID: 36287389.

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Last update: **2024/06/07 03:00**

