

**Conclusion:** Short time after oxygen-ozone's effects, oxygen-ozone showed a protective role inside invariably range of concentrations, while a damaging role beyond the range.

**Key words** Ozone; Astrocyte; SOD; MDA; LDH leaking ratio; Dead cell percentage

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### Comparison the effects of Indomethacin, Acetaminophen and Diclofenac as suppository with opioids on postoperative pain control after cesarian section in Ardebil hospital

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**Objectives:** Currently, The rate of cesarean section on the west societies is about 14%-15% and in Iran this rate is higher than universal statistics. Acute postoperative pain is one of the postoperative complications, and mothers experience it in different levels. It may cause failure of breast-feeding. Also it has effect on psychoemotional relation between newborn and mother. This study was planned to compare the effects of suppositories Indomethacin, Diclofenac and Acetaminophen in opioid usage after cesarean section in Hospital of Ardabil City.

**Design and Method:** In a double blind RCT, 120 ASA I-II candidates for cesarean with spinal anesthesia was randomly divided into 4 groups.

Acetaminophen was used in first, Indomethacin in second and Diclofenac in third group. Dosage was repeated every 6 hours and opioid usage was compared for first 24 hours. Fourth group as control group that received PRN opioid.

The severity of pain was recorded every 12 hours with VAS and for severe pain, 50 mg Intramuscular Meperidine used. The data were analyzed in SPSS software and analytical statistics such as ANOVA, Chi-square and Post HOC.

**Results:** The findings indicate that there is a significant statistical difference between Indomethacin and Acetaminophen suppositories in Meperidine usage in 24 hours ( $P < 0.05$ ). Also there is a significant difference between Diclofenac and Acetaminophen ( $P < 0.05$ ).

**Conclusion:** Considering the significant difference in opioid usage and analgesia in Indomethacin and Diclofenac group, using of these drugs is suggested for post cesarean analgesia.

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### Chronopharmacodynamics of Intrathecal Co-injection of Sufentanyl and Bupivacaine in Orthopedic Surgery of Lower Extremities

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**Background and objectives:** In chronopharmacology the biological rhythm variations caused by drug administration is assessed. Evaluation of the time of drug administration and the qualitative and quantitative effects of reactions to drugs is called chronopharmacodynamics. In this study, we assessed the chronopharmacodynamics of intrathecal co-administration of Sufentanyl and bupivacaine in surgical operations of lower extremities.

**Design & Methods:** In 2006, patients aged 20-50 with ASA physical status of I and II, who underwent surgical operation of lower extremities were entered into this prospective study. The patients received a slow intrathecal injection of 10 µg sufentanyl and 15 mg bupivacaine into Subarachnoid of third and fourth lumbar spaces in 30 seconds. After the operation, the time of first pain sensation and the visual analogue scale (VAS) score, as the measure of severity of pain, were recorded.

**Results:** 115 patients were studied in this project. The pain-free interval was considered as the time between injection and patient's demand for pain relief. This interval was 746 ( $\pm 322$ ) Minutes. The average score of pain severity on VAS at the time of demand for pain relief was 24.7 ( $\pm 9.3$ ). The average pain-free duration in patients injected about noon or at midnight