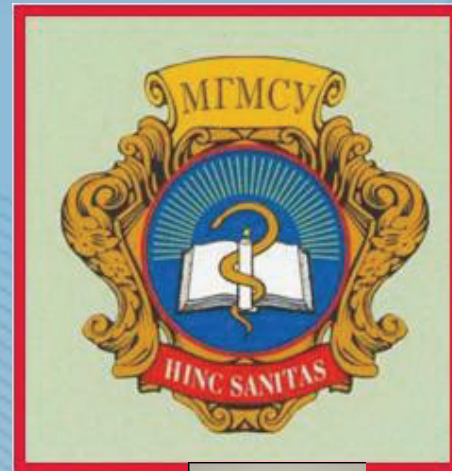




Xenon in dentistry



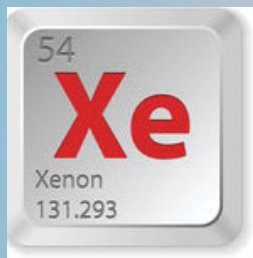
Moscow State University of Medicine and Dentistry
named after A.I. Evdokimov
Russia



Russian fundamental researches have been allowed to use the xenon for anesthesia since 1999.

Oxygen-xenon mixture with the help of specially created device was allowed to use for removing of painful syndrome of outpatient since 2010.

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Since 2011 under the leadership of professor Rabinovich S.A. have been carried out clinical approbation of different methods oxygen-xenon inhalations in outpatient dentistry.

«СТАКИ»
dental device for xenon inhalations

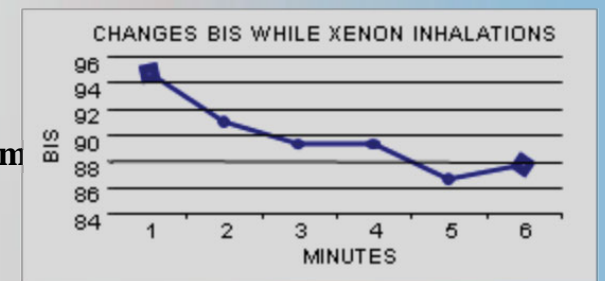
«ПАКИ»
portable device for xenon inhalations

«КСЕМЕД»
balloon medical xenon

Research objective: to estimate efficiency and safety oxygen-xenon inhalations, to define indications for application in out-patient dentistry.

Methods: by means of the device for inhalation anesthesia «СТАКИ» of «Биология Газ сервис» carried out anesthesia and sedation by oxygen-xenon 1/1 («КСЕМЕД», Russia) to ambulatory patients at various interventions. Indicators of haemodynamics (AD, cardiac rate), breath (breathing rate, SpO₂), analgesia level (definition of the pain threshold) and sedation (Bis) were estimated.

Results: 80 patients with anesthetic risk of the I-II ASA and dentophobia were enclosed in researches. Indicators of haemodynamics didn't exceed admissible norm, respiratory violations and discomfort didn't observe, the analgesia and an operated sedation managed to be achieved through 2-3 minutes from the inhalation beginning.



INDICATION	CONTINUANCE INHALATIONS (minutes)	BEGINNING ANESTHESIA (minutes)	POSTOPERATIVE PAIN WITHOUT INHALATIONS (BAШ)	POSTOPERATIVE PAIN WITH INHALATIONS (BAШ)	TIME DURATION ANESTHESIA (hours)
Pulpitis	2, 3±0,5	2,7±1,2	56,3±15,2 *	12,6±6,8*	19,0±3,2
Periodontitis	3,1±0,3	3,3±0,4	48,3±11,7*	21,2±8,9*	12,1±2,6
Implantation	3,3±0,6	2,7±0,5	70,5±20,4*	23,7±9,7*	9,6±4,3
Extraction of tooth	2,9±1,1	2,5±0,3	45,3±7,5*	12,6±7,7*	14,7±5,5

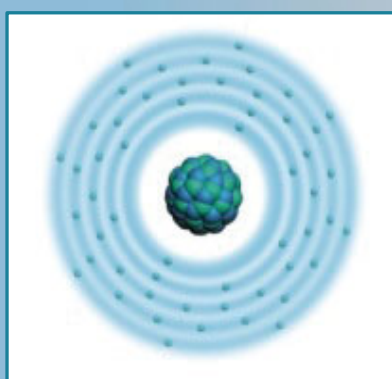
DESCRIPTOR	WITH INHALATIONS OF XENON			WITHOUT INHALATIONS OF XENON	
	BEFORE INHALATIONS	AFTER INHALATIONS	AFTER TREATMENT	BEFORE TREATMENT	AFTER TREATMENT
LEVEL STATE ANXIETY	38,5± 7,7	20,25±6,6 *	22,3±4,3*	39,5±8,9	37,5±7,4*
LEVEL TRAIT ANXIETY	47,5±5,1	35,5±4,4*	34,4±6,6*	45,7±5,6	44,4±6,0

*P < 0,05

*P < 0,05

Discussion: xenon is an independent anesthetic, it also increase efficiency and duration of the local anesthesia, reduce psychoemotional pressure, dentophobia and stressful reactions, save identical contact with patient, edema tissue at the postoperative period is less denominated, the regeneration speeds up, the recovery period becomes shorter.

The xenon may be used under sharp surgical disease, traumatic damages, painful neurological syndrome, pains at dysfunctions of tempomandibular joint, for preventing of postoperative pain and high emetic reflex, endodontic and orthopedic treatment (the period of adaptation to dentures).



Conclusion: this study suggest that xenon could be used in practical dentistry.