

Comparison of dexmedetomidine and midazolam for conscious sedation in dental surgery monitored by bispectral index

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Midazolam

- ✓ **reduce anxiety effectively without producing cardiorespiratory instability**
- ✓ **either alone or in combination with opioids or propofol, orally or intravenously.**

-
- ✗ **delayed recovery and psychomotor function**
 - ✗ **adverse respiratory effects**

Dexmedetomidine



highly selective α_2
adrenoceptor agonist
with high selectivity for
the α_2 compared with
the α_1 receptor

Dexmedetomidine

It produces dose-dependent sedation, anxiolysis, and analgesia without respiratory depression. Infusion of a small dose of the drug in healthy volunteers provided sedation that could easily be reversed with verbal stimuli.

Hall JE, Uhrich TD, Barney JA, Arain SR, Ebert TJ. Sedative, amnestic analgesic properties of small-dose dexmedetomidine infusions. *Anesth Analg* 2000;**90**:699–705.

Dexmedetomidine

✗ reduction in blood pressure and heart rate

- ✓ anal gesic property
- ✓ shorter recovery profile
- ✓ less cognitive impairment
- ✓ no respiratory depression

Dexmedetomidine vs propofol

Bispectral index

Dexmedetomidine vs midazolam



sedation, anxiolysis, analgesia, operating conditions, patients' satisfaction and safety

prospective, randomised, double-blind study



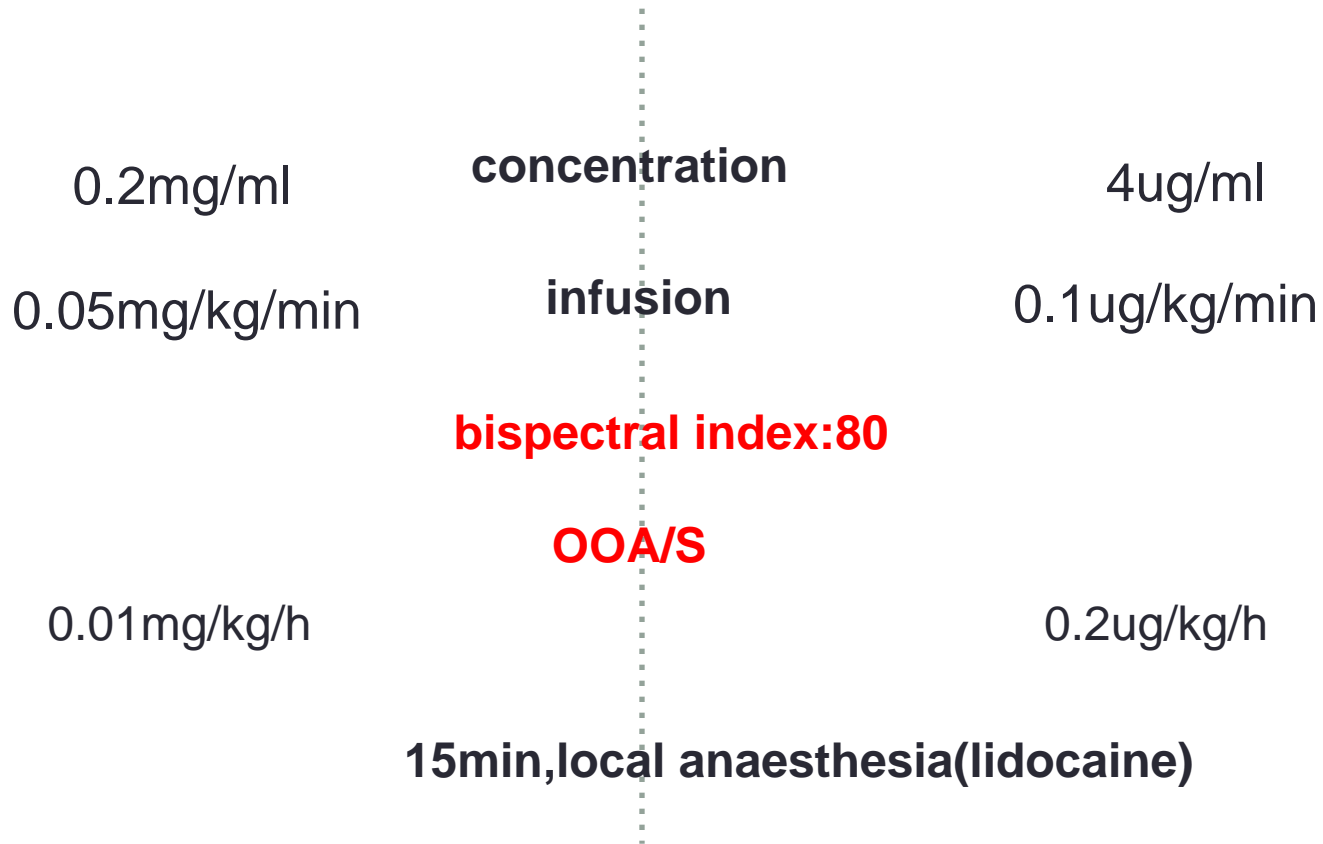
ASA1 or II
outpatient dental procedures



Taking β -2 agonists or benzodiazepines
had severe renal or hepatic dysfunction,
who were pregnant
who were allergic to either of the drugs.

Midazolam

Dexmedetomidine



警觉性/镇静评分表

Table 1
Observer's assessment of alertness and sedation using the Observer's Assessment Alertness/Sedation Scale.²²

Responsiveness	Speech	Facial expression	Eyes	Score
Responds readily to normal tone of voice	Normal	Normal	Clear, no ptosis	5
Responds slowly to normal tone of voice	Mild slurring	Mild relaxation	Mild ptosis, less than half the eye	4
Responds only after loud or repeated calling	Slurring	Pronounced relaxation	Glazed, obvious ptosis	3
Responds after mild prodding or shaking	Few recognised words	Pronounced relaxation	Glazed, obvious ptosis	2
No response to mild prodding or shaking	No words	Pronounced relaxation	Glazed, obvious ptosis	1

The OOA/S scale was used to assess the level of sedation observed by the anaesthetist (TLK) subjectively before initiating sedation, and then at **10min** intervals until the end of the procedure

Table 2

Comparability of the groups ($n = 30$ in each). Data are mean (SD) or number.

Variable	Dexmedetomidine	Midazolam
Age (years)	26 (7)	29 (9)
Weight (kg)	62 (14)	65 (9)
Body mass index	22 (4)	23 (3)
Sex		
Male	19	23
Female	11	7

人口统计学基本无差异

Table 3

Mean (SD) measured variables of sedation ($n = 30$ in each group).

Variable	Dexmedetomidine	Midazolam	
Dose of local anaesthetic (ml)	5.4 (2.3)	6.7 (3.3)	} P>0.05
Volume of sedative (ml)	17.7 (4.8)	22.2 (5.4)	
OOA/S score at the beginning of the procedure	5	4.9 (0.2)	
Minimum OOA/S score	2.53 (6.3)	3.1 (0.9)	→ P=0.03
Maximum bispectral index	98.0 (0.3)	97.4 (2.1)	} P>0.05
Minimum bispectral index	69.9 (12.9)	76.4 (12.4)	

OOAS, Observer's Assessment Alertness/Sedation Scale.

Table 4

Mean (SD) indices of safety.

Variable	Dexmedetomidine	Midazolam	<i>p</i> value
Heart rate (bpm)			
Maximum	80 (11)	85 (14)	0.01
Minimum	59 (10)	67 (13)	<u>0.14</u>
Systolic blood pressure (mmHg)			
Maximum	126 (12)	129 (14)	0.02
Minimum	99 (10)	104 (12)	0.46
Diastolic blood pressure (mmHg)			
Maximum	79 (9)	81 (11)	0.39
Minimum	54 (7)	60 (9)	<u>0.04</u>
Oxygen saturation (%)			
Maximum	99 (<1)	99 (<1)	0.52
Minimum	97 (2)	97 (2)	0.29
Respiratory rate (min ⁻¹)			
Maximum	21 (3)	20 (4)	0.14
Minimum	14 (2)	14 (3)	0.61

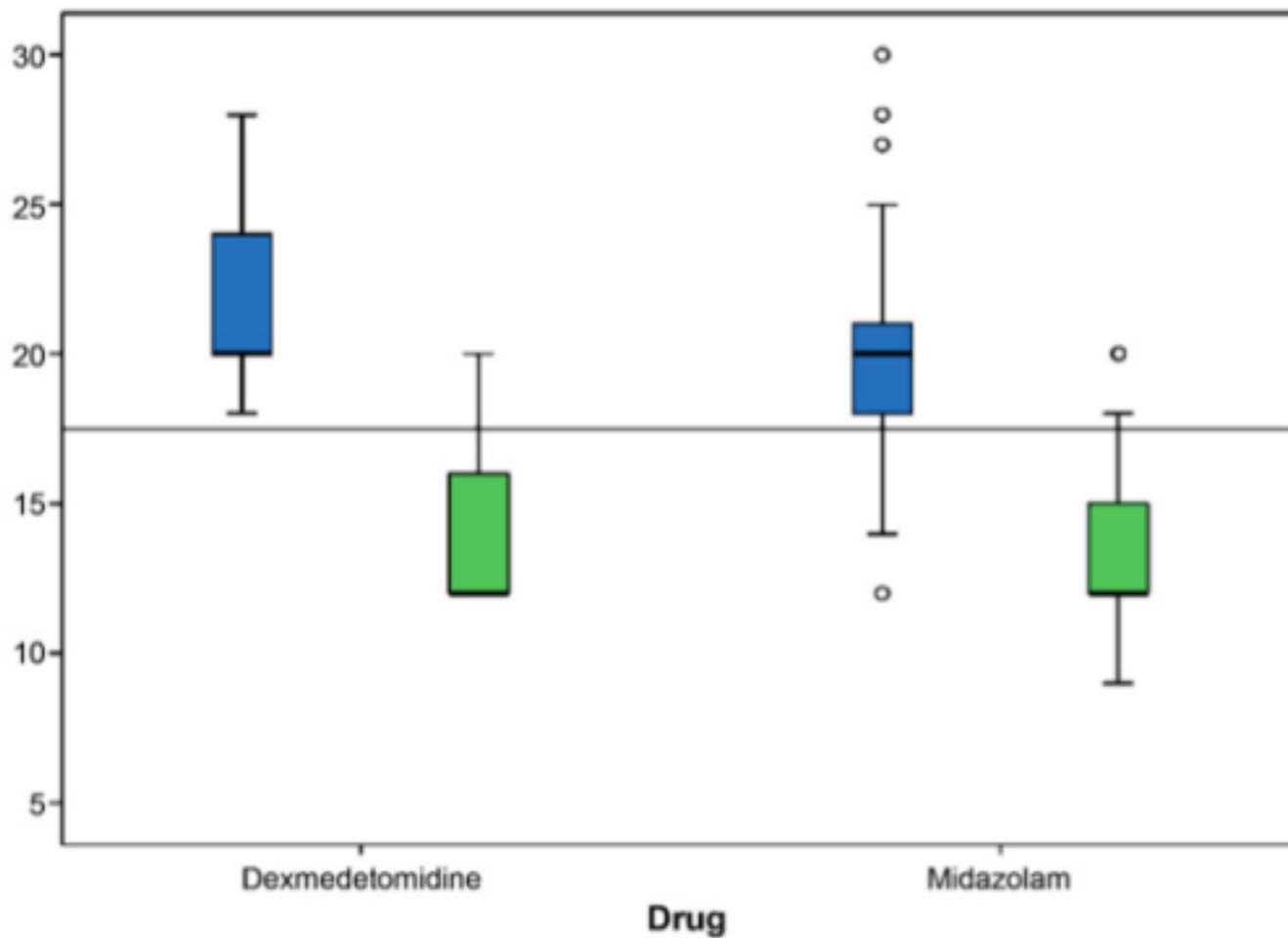
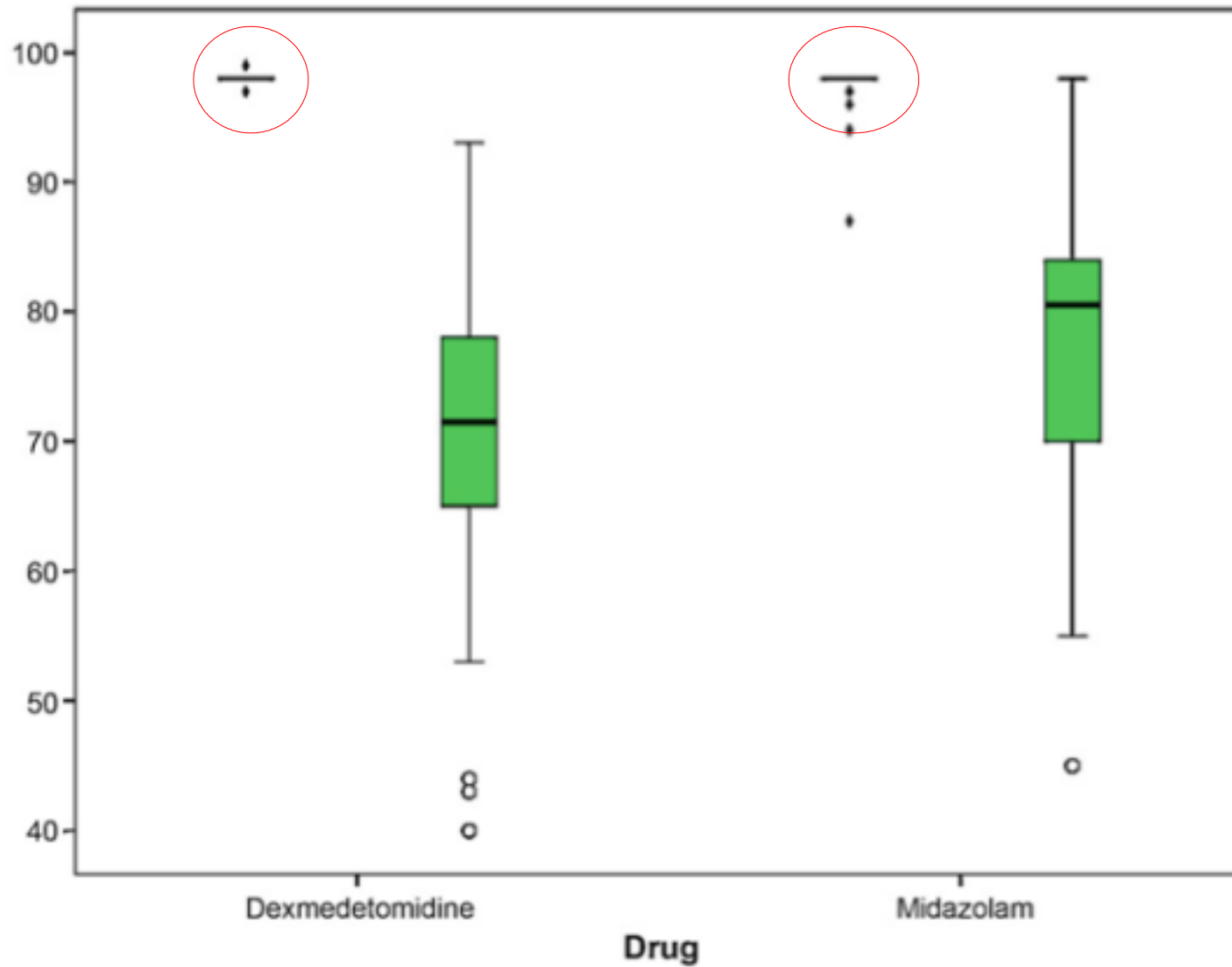


Fig. 1. Mean (SD) respiratory profile. The blue boxes indicated the maximum values, and the green boxes the minimum values.



satisfaction



Excellent

good

satisfactory

poor

DEX

We have shown that dexmedetomidine can work **as well as** midazolam for outpatient dental procedures and can be considered as **an alternative** to midazolam



satisfac

Table 3
Mean (SD) measured variables of sedation ($n = 30$ in each group).

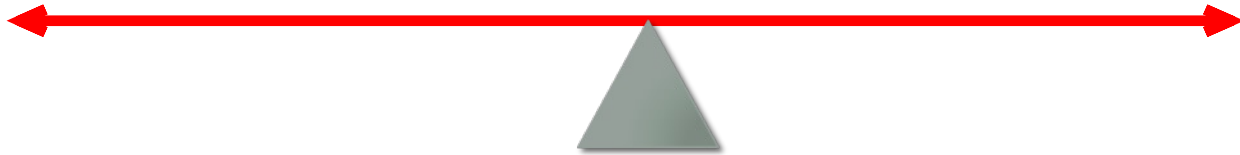
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OOAS, Observer's Assessment Alertness/Sedation Scale.

Excellent

DEX

bispectral index



- 研究对象少，一共60例
- 具体操作类型并未在文中表明
- 缺乏对于疼痛的评分



谢谢