**Table 1**. Characteristics of studies involving oral sedation

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Author | Age | M dose | outcomes | | | | | | | | | | | | | K dose | | outcomes | | | | | | | | | | | | |
| Damle  (33)  2008  India | 2-6 | Anxiolysis score | Sedation  score | 0 min | Alert  90% | | Awake  0% | | | | | Drowsy  10% | | Asleep  0% | | 5mg/kg  n=10 | | Sedation score | 0 min | | | Alert  80% | | Awake  10% | | | Drowsy  0% | | Asleep  0% | |
| 30 min | Alert  10% | | Awake  0% | | | | | Drowsy  80% | | Asleep  10% | | 30 min | | | Alert  0% | | Awake  10% | | | Drowsy  90% | | Asleep  0% | |
|  | 0 min | Panicky  10% | | Moaning  40% | | | | | composed  50% | | friendly  0% | | Anxiolysis score | 0 min | | | Panicky  30% | | Moaning  30% | | | composed  40% | | friendly  0% | |
| 30 min | Panicky  0% | | Moaning  20% | | | | | composed  20% | | friendly  60% | | 30 min | | | Panicky  20% | | Moaning:  30% | | | composed  50% | | friendly  0% | |
| Duration of recovery (Hours)  Mean value | 3.10 | | | | | | | | | | | | Duration of recovery (Hours)  Mean value | 3.79 | | | | | | | | | | | |
| Rai  (38)  2007  India | 3-6 | 0.1mg/kg  n=10 | Sedation score  (Houpt Scale) | Immediately  2.1+0.5 | after 5 min  3.2+0.4 | | | | | | | at the end  3.2+0.7 | | | | 0.5mg/kg  n=10 | | sedation score  (Houpt Scale) | Immediately  3.4+0.6 | | | | after 5 min  3.8+0.4 | | | | | | at the end  3.9+0.3 | |
| Antunes  (37)  2016  Brazil | 0-4 | M dose | Sedation  score  (OSUBRS) | Score 1  (Quiet behavior) | OR= 2.9(1.2–6.9) | | | | | | | | | | | MK dose | | sedation  score  (OSUBRS) | Score 1  (Quiet behavior) | | | | OR=4.3(1.6–11.4) | | | | | | | |
| 1mg/kg  n=16 | sum of the highest scores observed in 5 periods | FU1  13.8 | FU2  8.8 | | FU3  7.7 | | | | FU4  5.5 | FU5  5.2 | | FU6  5.8 | M(0.5mg/kg)+K(3mg/kg)  n=13 | | sum of the highest scores observed in 5 periods | | | | FU1  8.4 | | | FU2  7.7 | FU3  5.9 | FU4  5.0 | FU5  5.0 | FU6  5.0 |
| Duration of treatment  (min) | FU1  10.6 | FU2  11.9 | | FU3  14.0 | | | | FU4  9.6 | FU5  10.5 | | FU6  12.5 | Duration of treatment  (min) | | | | FU1  6.4 | | | FU2  10.8 | FU3  14.4 | FU4  12.5 | FU5  11.3 | FU6  12.5 |
| Moreira  (34)  2012  Brazil | 0-3 | M dose | Sedation score  (OSUBRS) | Dental exam | 13.6 ± 4.5 | | | | | | | | | | | MK dose | | sedation score  (OSUBRS) | | | | | Dental exam: 12.6±4.4 | | | | | | | |
| 0.1mg/kg  n=16 | Treatment | 14.0 ± 3.8  P<0.05 | | | | | | | | | | | M(0.5mg/kg)+K(3mg/kg)  n=11 | | Treatment: 8.6 ± 4.1  P<0.05 | | | | | | | |
| Duration of treatment (min) | 28.5±11.2 | | | | | | | | | | | | Duration of treatment (min) | | | | | 38.5±14.0 | | | | | | | |
| Koirala  (35)  2006  Nepal | 2-9 | M dose | Outcomes | K dose | Outcomes | | | | | | | | | | | | | MK dose | | | | | Outcomes | | | | | | | |
| 0.5mg/kg | Sedation score | 5mg/kg | Sedation score | | | | | | | | | | | | | M (0.4 mg/kg)+ K (3 mg/kg) | | | | | Sedation score  best in MK group | | | | | | | |
| Ease of treatment completion | Ease of treatment completion | | | | | | | | | | | | | Ease of treatment completion  best in MK group | | | | | | | |
| Onset of sedation | Onset of sedation | | | | | | | | | | | | | Onset of sedation  shortest in MK group | | | | | | | |
| Recovery time  Shortest in M group | Recovery time | | | | | | | | | | | | | Recovery time | | | | | | | |
| Thakur  (36)  2021  India | 3-9 | MK dose | outcomes | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| M(0.2 mg/kg)+K(5 mg/kg)  n=12 | sedation score (MOAAS scale) | | | | | | | | At baseline:6.0±0.0 | | | | | Start of treatment:4.2±1.0 | | | | | During treatment:3.9±1.0 | | | | | | End of treatment:4.1±1.1 | | | |
| Behavior scale (MOAAs) | Score:% | | | | | | | At baseline:P=0.62 | | | | | Start of treatment:P=0.90 | | | | | During treatment:P=1.00 | | | | | | End of treatment:P=0.86 | | | |
| 1:(Calm and cooperative) | | | | | | | 8 | | | | | 10 | | | | | 10 | | | | | | 9 | | | |
| 2:(Anxious but reassurable) | | | | | | | 3 | | | | | 0 | | | | | 1 | | | | | | 2 | | | |
| 3:(Anxious but not reassurable) | | | | | | | 0 | | | | | 1 | | | | | 1 | | | | | | 1 | | | |
| 4:(Crying and resisting) | | | | | | | 1 | | | | | 1 | | | | | 0 | | | | | | 0 | | | |
| Wake-up behavior score  (MOAAS scale) | 1.17 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ease of treatment completion (Houpt Scale  Mean value | 5.33 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| M(0.3 mg/kg)+K(3 mg/kg)  n=12 | Sedation score(MOAAS scale) | | | | | | | At baseline:6.0±0.0 | | | | | | | Start of treatment:4.2±0.9 | | | During treatment:4.0±0.9 | | | | | | | End of treatment:4.8±1.1 | | | |
| Behavior scale (MOAAs) | Score:% | | | | | | At baseline:P=0.62 | | | | | | | Start of treatment:P=0.90 | | | During treatment:P=1.00 | | | | | | | End of treatment:P=0.86 | | | |
| 1:(Calm and cooperative) | | | | | | 7 | | | | | | | 11 | | | 10 | | | | | | | 9 | | | |
| 2:(Anxious but reassurable) | | | | | | 5 | | | | | | | 0 | | | 1 | | | | | | | 1 | | | |
| 3:(Anxious but not reassurable) | | | | | | 0 | | | | | | | 1 | | | 1 | | | | | | | 1 | | | |
| 4:(Crying and resisting) | | | | | | 0 | | | | | | | 0 | | | 0 | | | | | | | 0 | | | |
| Wake-up behavior score  (MOAAS scale) | 1.08 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ease of treatment completion (Houpt Scale  Mean value | 5.58 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Somri  (39)  2012  Isrrael | 3-10 | M dose | Outcomes |  | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.5mg/kg  n=30 | sedation score  (Wisconsin scale) | Baseline:2.5±0.57 | | | | | 15min:2.0±0.49 | | | | | | | | | 30min:1.5±0.51 | | | | | | | 45min:1.3±0.47 | | | | | |
| 0.75mg/kg  n=30 | 3.7±0.58 | | | | | 3.5±0.51 | | | | | | | | | 3.4±0.50 | | | | | | | 3.2±0.50 | | | | | |
| 1mg/kg  n=30 | 4.2±0.55 | | | | | 3.5±0.51 | | | | | | | | | 3.5±0.51 | | | | | | | 3.5±0.51 | | | | | |
| 0.5mg/kg  n=30 | cooperation score  (Houpt scale) | Baseline:2.7±0.83 | | | | | 15min:2.6±0.76 | | | | | | | | | 30min:2.5±0.86 | | | | | | | 45min:2.3±0.89 | | | | | |
| 0.75mg/kg  n=30 | 4.2±0.66 | | | | | 4.0±0.53 | | | | | | | | | 3.8±0.70 | | | | | | | 3.8±0.63 | | | | | |
| 1mg/kg  n=30 | 4.8±0.83 | | | | | 4.1±0.61 | | | | | | | | | 4.1±0.52 | | | | | | | 3.5±0.68 | | | | | |
| 0.5mg/kg  n=30 | Duration of treatment(min) | 43.6±12.3 P=0.43 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.75mg/kg  n=30 | 45.2±6.1 P=0.43 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1mg/kg  n=30 | 46.8±7.9 P=0.43 | | | | | | | | | | | | | | | | | | | | | | | | | | |

OSURB=Ohio State University Behavioral Rating Scale; FU = Follow-up session; M = Midazolam; K = Ketamine; MK = Midazolam-Ketamine; OR= Odds Ratio

**Table 2.** Characteristics of studies involving oral/intranasal sedation

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Author | Age | OM | Outcomes | | | | | OMK | Outcome | | | | | IMK | Outcomes | | | | | |
| Ghajari  (32)  2015  Iran | 3-6 |  |  | | | | | M(0.5 mg/kg)+K(10 mg/kg)  n=23  (cross-over) | Sedation score  (Houpt Scale) | Baseline  no data | LA injection | after 15min | after  30 min  P>0.05 | M(0.5 mg/kg)+K(10 mg/kg)  n=23  (cross-over) | Sedation score (Houpt Scale) | Baseline  no data | LA injection  in favor  P<0.05 | after 15 min  in favor  P<0.05 | | after 30 min  P>0.05 |
| Success rate |  |  | after 15min  39.1% | after  30 min  34.7% | Success rate |  |  | after 15 min  96.6% | | after 30 min  60.9% |
| Recovery time | 1h  P<0.05 | | | | Recovery time | 2.5 h  P<0.05 | | | | |
| Maximum drowsiness | under 2 h  P=0.004 | | | | Maximum drowsiness | 4-6 h  P=0.004 | | | | |
| Viana  (41)  2021  Swirzerland | 36-76  month | 1mg/kg  n=15 | Sedation score | minimal  6(40.0%) | moderate  9(60.0%) | | deep  0(0%) | M(0.5 mg/kg)+K(4 mg/kg)  n=6 | Sedation score | minimal  2(33.3%) | moderate  4(66.7%) | deep  0(0%) | | M(0.2 mg/kg)+K(4 mg/kg)  n=14 | Sedation score | minimal  3(21.4%) | moderate  11(78.6%) | | deep  0(0%) | |
| level of sedation | Minimal  6(40.0%) | | Moderate  9(60.0%) | | level of sedation | Minimal:  2(33.3%) | | Moderate:  4(66.7%) | | level of sedation | Minimal  3(21.4%) | | | Moderate  11(78.6%) | |
| behavior during dental session | Positive  7(46.7%) | | Negative  8(53.3%) | | behavior during dental session | Positive:  5(83.3%) | | Negative:  1(16.7%) | | behavior during dental session | Positive  6(42.9%) | | | Negative  8(57.1%) | |
| Sadi-Filho  (40) 2019  Swirzerland | 0-7  (3.1) | 1mg/kg  n=24 | Sedation score | Positive behavior at the entrance to the dental office  21(77.2%) | | | | M(0.5 mg/kg)+K(4 mg/kg)  n=25 | Sedation score | Positive behavior at the entrance to the dental office  26(96.3%) | | | | M(0.2 mg/kg)+K(4 mg/kg)  n=26 | Sedation score | Positive behavior at the entrance to the dental office  23(82.1%) | | | | |
| Procedure aborted  4(14.3%) | | | | Procedure aborted  3(10.7%) | | | | Procedure aborted  2(7.1%) | | | | |
| Physical restraint needed (except mouth prop)  21(75.0%) | | | |  | Physical restraint needed (except mouth prop)  16(57.1%) | | | | Physical restraint needed (except mouth prop)  18(64.3%) | | | | |
| Duration of treatment  (min) | 24.0(20.5-29.0) | | | | Duration of treatment  (min) | 27.5(23.0-35.0) | | | | Duration of treatment  (min) | 24.0(21.0-28.8) | | | | |
| Bhol  (42)  2021  India | 2-6 |  |  | | | | | M(0.5mg/kg)+K(4mg/kg)  n=? | Sedation score | Deeper sedation achieved: 98% | | | | M(0.2mg/kg)+K(4mg/kg)  n=? | Sedation score | Deeper sedation achieved: 93% | | | | |
| onset of sedation: 15-30 min | | | | onset of sedation: 5-6 min | | | | |
| adverse effect post recovery | vomiting, lacrimation, sneezing, coughing post the treatment and in the recovery period (8%) | | | | adverse effect post recovery | 5% showed increased lacrimation, vomiting | | | | |
| level of professional training required | more | | | | level of professional training required | less | | | | |
| Duration of treatment | useful for longer period | | | | Duration of treatment | useful for shorter treatment | | | | |

OSURB=Ohio State University Behavioral Rating Scale; M= Midazolam; K=Ketamine, OM = Oral Midazolam; MK=Midazolam-Ketamine; OMK = Oral Midazolam-Ketamine; IMK = Intranasal Midazolam-Ketamine

**Table 3.** Characteristics of studies involving intranasal sedation

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Author | Age | IM | Outcomes | | | | | | IK | Outcomes | | | | | IMK | Outcomes | | |
| Mehran  (43)  2016  Iran | 3-6 | 0.2mg/kg  n=17  (cross-over) | Sedation score  (Houpt scale) | LA  2:5.9%  3:58.8%  4:35.3%  5:0% | 5min  2:0%  3:35.3%  4:58.8%  5:5.9% | | | 15min  2:0%  3:35.3%  4:58.8%  5:5.9% | 0.5mg/kg  n=17 | Sedation score  (Houpt scale) | LA  2:5.9%  3:17.6%  4:70.6%  5:5.9% | | 5min  2:5.9%  3:23.5%  4:41.2%  5:29.4% | 15min  2:5.9%  3:23.5%  4:41.2%  5:29.4% |  |  | | |
| Bahetwar  (44)  2011  India | 2-6 | 0.3mg/kg  n=45  (cross-over) | Adequate depth of sedation | Score 2,3 | 38(84%) | | | | 6mg/kg  n=45 | Adequate depth of sedation | Score 2,3 | | 42(93%) | | M(0.2 mg/kg)+K(4 mg/kg)  n=45  (cross-over) | Adequate depth of sedation | Score 2,3 | 40(89%) |
| Onset of sedation:  Mean range  P<0.0031 (ANOVA) | 6.80±1.53(5-10) | | | | | Onset of sedation:  Mean range  P<0.0031 (ANOVA) | 5.79±1.42(5-8) | | | | Onset of sedation:  Mean range  P<0.0031 (ANOVA) | 5.99±1.41(4-10) | |
| Behavior/Response to treatment  (ease of treatment completion) rating scale  "satisfactory session" | Score 4,5 | | 32 (72%) | | | Behavior/Response to treatment  (ease of treatment completion) rating scale  "satisfactory session" | Score 4,5 | 41(92%) | | | Behavior/Response to treatment (ease of treatment completion) rating scale  "satisfactory session" | Score 4,5 | 38(84%) |
| Recovery time | 31.69±3.37(26-40) min | | | | | Recovery time | 39.98±3.18 (34-46) min | | | | Recovery time | 41.21±4.44 (35-49) min | |
| Treatment outcome | Successful session (n%):31(69%) | | | | | Treatment outcome | Successful session(n%):40(89%) | | | | Treatment outcome | Successful session(n%):38(84%) | |
| unsuccessful session (n%):6(13%) | | | | | unsuccessful session (n%):3(7%) | | | | unsuccessful session(n%):4(9%) | |
| Aborted sessions: 8 (18%) | | | | | Aborted sessions:2(4%) | | | | Aborted sessions:3(7%) | |
| Surendar  (45)  2014  India | 4-14 | 0.2mg/kg | Adequate depth of sedation | Score 2,3 | | | 15 (71.4%) | | 5mg/kg | Adequate depth of sedation | Score 2,3 | | | 16(76.2%) |  |  | | |
| Overall sedation level | Satisfactory: 15 (71.4%) | | | | | Overall sedation level: | Satisfactory: 16 (76.2%) | | | |
| Unsatisfactory: 6 (28.6%) | | | | | Unsatisfactory: 5 (23.8%) | | | |
| Behavior/Response to treatment  (ease of treatment completion) rating scale  "Satisfactory session" | Score 4,5 | | | 15 (71.4%) | | Behavior/Response to treatment  (ease of treatment completion) rating scale  "Satisfactory session" | Score 4,5 | | | 16(76.2%) |
| Overall behavior | Satisfactory:15(71.4%) | | | | | Overall behavior | Satisfactory:16(76.2%) | | |
| Unsatisfactory:6(28.6%) | | | | | Unsatisfactory:5(23.8%) | | |
| Overall success rate | Satisfactory:13(61.9%) | | | | | Overall success rate | Satisfactory:14(66.7%) | | |
| Unsatisfactory:8(38.1%) | | | | | Unsatisfactory:7(33.3%) | | |

Score 2=minimal sedation; Score 3=moderate sedation; Score 4=Mild objections or whimpering but treatment not interrupted; Score 5=Quiet and cooperative; Adequate depth of sedation=Score 2,3; Satisfactory session=Score 4,5

**Table 4.** Characteristics of studies rectal sedation

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aurhor | Age | Rectal M | Outcomes | | | | | | Rectal MK | Outcomes | | | | | |
| Lökken  (46)  1994  Norway | 2-7 | 0.3mg/kg  n=24  (cross-over) | Level of sedation  (feasibility of treatment) | | excellent or good  67% | | possible or difficult  33% | | M(0.3 mg/kg)+K(1 mg/kg)  n=24  (cross-over) | Sedation score  (feasibility of treatment | | excellent or good  75% | | possible or difficult  25% | |
| Anxiety(VAS) | | Baseline  17±27  P=0.65 | after 15 min  7±39  P=0.09 | after 30 min  23±40  P=0.08 | after 60 min  7±37  P=0.24 | Anxiety score (VAS) | | Baseline  25±31  P=0.65 | after 15 min  4±30  P=0.09 | after 30 min  8±47  P=0.08 | after 60 min  2±42  P=0.24 |
| Drowsiness(VAS) | | Baseline  52±1  P=0.91 | after 15 min  21±15  P=0.04 | after 30 min  29 ± 12  P=0.36 | after 60 min  18 ± 12  P=0.99 | Drowsiness (VAS) | | Baseline  52±1  P=0.91 | after 15 min  31±12  P=0.04 | after 30 min  32±11  P=0.36 | after 60 min  18±13  P=0.99 |
| Amnesia | | Dentist's assessment 17±20  P=0.02 | | Parent's assessment  23±27    P=0.12 | | Amnesia | | Dentist's assessment:  8±19    P=0.02 | | Parent's assessment:  15±21  P=0.12 | |
| Duration of treatment(min) | | 24.8±7.6 | | | | Duration of treatment(min) | | 24.3 ± 6.0 | | | |
| Local anesthetic(ml) | | 1.1±0.4 | | | | Local anesthetic(ml) | | 1.2 ± 0.4 | | | |
| ROELOFSE  (47)  1996  South Africa | 2-7 | 1mg/kg  n=50 | Level of sedation (Ramsay sedation score) | immediately before procedure: | No response:  0% | oriented/ calm:  84% | verbal command:  12% | retarded response:  4% | M(0.35 mg/kg)+K(5 mg/kg)  n=50 | Level of sedation (Ramsay sedation score) | immediately before procedure | No response  18% | oriented/ calm  14% | verbal command  42% | retarded response  22% |
| after 30 min | anxious/ agitated  0% | oriented/ calm  71% | verbal command  27% | retarded response  2% | after 30 min | anxious/ agitated  2% | oriented/ calm  14% | verbal command  44% | retarded response  28% |
| Recovery statistics:  \*: P<0.05 | Awake | admission to recovery room  100\* | 30 min  96\* | 60 min  88 | 120 min  98 |  | Recovery  statistics | Awake | admission to recovery room  60 | 30 min  80 | 60 min  78 | 120 min  98 |
| Coughing and crying | admission to recovery room  100\* | 30 min  100\* | 60 min  96 | 120 min  98 | Coughing and crying | admission to recovery room  88 | 30 min  90 | 60 min  86 | 120 min  94 |
| Moving purposefully | admission to recovery room  96\* | 30 min  92\* | 60 min  86\* | 120 min  96\* | Moving purposefully | admission to recovery room  34 | 30 min  62 | 60 min  60 | 120 min  75 |
| Duration of treatment(min) | | 5.6(±1.3) | | | | Duration of treatment(min) | | 5.8(±1.2) | | | |

**Table 5.** Characteristics of studies involving subcutaneous sedation

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Author | Age | SC M | Outcomes | | | | | SC MK | Outcomes | | | | |
| Flores-Castillo D  (48)  2015  Mexico | 17-46  month | 0.4mg/kg  n=13 | Level of sedation  (moidified Houpt scale)  General behavior | 4:30.77% | 3:69.23% | 2:0% | 1:0% | M (0.4 mg/kg)+ K(0.1 mg/kg)  n=13 | Level of sedation  (moidified Houpt scale)  General behavior | 4:53.85% | 3:38.46% | 2:7.69% | 1:0% |

4=No crying or movement; 3=Some crying and/ or movement without interrupting the treatment; 2=Difficulty in performing the treatment; 1=Non-stop crying and movement, treatment is extremely difficult

**Table 6.** Characteristics of studies involving buccal/ intranasal sedation

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Author | Age | Buccal  Midazolam  spray | outcomes |  | | | | | | | Intra-nasal  Midazolam  spray | outcomes | | | | | | | |
| Mowafy  (49)  2021  Egypt | 3-5 | 0.3mg/kg  n=36 | Sedation score modified Houpt scale(n) | 1:1 | 2:1 | 3:11 | | 4:11 | 5:12 | | 0.3mg/kg  n=36 | Sedation score  modified Houpt scale(n) | 1:2 | 2:0 | 3:9 | | 4:19 | 5:6 | |
| Acceptance of drug administration(n) | readily:14 | slight resistance:11 | | great resistance:11 | | | Total:36 | Acceptance of drug administration(n) | readily:10 | slight resistance:13 | | great resistance:13 | | | Total:36 |

1=Aborted; 2=Very poor; 3=Fair; 4=Good; 5=Excellent; n=number of patients

**Table 7.** Characteristics of studies involving buccal/ oral sedation with midazolam

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Author | Age | Buccal M | outcomes |  | | | | | | | | Oral M | outcomes | | | | | | | | |
| Tavassoli  (50)  2014  Iran | 2.5-6 | 0.3mg/kg  n=18 | Sedation score (Houpt scale) | First visit\*(n) | 1:5 | 2:5 | 3:5 | 4:2 | 5:1 | 6:0 | Total:18 | 0.5mg/kg  n=18 | Sedation score (Houpt scale) | First visit\*(n) | 1:5 | 2:8 | 3:3 | 4:2 | 5:0 | 6:0 | Total:18 |
| second visit\*\*(n) | 1:6 | 2:6 | 3:5 | 4:0 | 5:1 | 6:0 | Total:18 | Second visit\*\*(n) | 1:5 | 2:6 | 3:5 | 4:2 | 5:0 | 6:0 | Total:18 |

1=Excellent; 2=Very-good; 3=Good; 4=Fair; 5=Poor; 6=Aborted; \*P=0.4; \*\*P=0.5; n=number of patients

**Table 8.** Characteristics of studies involving oral/ IV sedation

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Author | Age | Oral M | outcomes | | | | | | | | IV M | outcomes | | | | | | | |
| Tyagi  (51)  2012  India | 2-10 | 0.5mg/kg  n=10 | Sedation score  (Houpt scale) | number of patients in each group | 1:0 | 2:0 | 3:0 | 4:1 | 5:9 | 6:0 | 0.06mg/kg  n=10 | Sedation score (Houpt scale) | number of patients in each group | 1:0 | 2:0 | 3:0 | 4:0 | 5:2 | 6:8 |
| Mean values for overall behavior | 4.9 | | | | | | Mean values for overall behavior | 5.8 | | | | | |

1=Aborted; 2=Poor; 3=Fair; 4=Good; 5=Very-good; 6=Excellent; Oral M=Oral Midazolam; IV M=IV Midazolam