Dosing for *dexdor*® in ICU - 8 mcg/ml concentration

For the sedation of adult ICU patients requiring a sedation level not deeper than arousal in response to verbal stimulation (corresponding to Richmond Agitation-Sedation Scale (RASS) 0 to -3

dexdor® dexmedetomidine

Cooperative Comfortable Sedation

- Dilute prior to use
- Do not use a loading dose
- The recommended initial starting dose is 0.7 mcg/kg/hr
- Titrate in a stepwise manner according to response
- Remember that ***dexdor***® has a gradual onset of action
- Do not exceed maximum dose of 1.4 mcg/kg/hr

Volumes required to achieve 8 mcg/ml concentration

Volume of *dexdor*® 100 mcg/ml concentrate for solution for infusion	Volume of diluent	Total volume of infusion
4 ml	46 ml	50 ml
8 ml	92 ml	100 ml
20 ml	230 ml	250 ml
40 ml	460 ml	500 ml

1 **Find patient's actual body weight**

2 **Find desired dose (for patients already intubated and sedated switch to *dexdor*® at 0.7 mcg/kg/hr.) Be ready to titrate dose up or down according to patient response**

Patient's actual body weight (kg)	Dose in microgram / kilogram / hr (mcg/kg/hr)												
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4
50	1.3	1.9	2.5	3.1	3.8	4.4	5.0	5.6	6.3	6.9	7.5	8.1	8.8
55	1.4	2.1	2.8	3.4	4.1	4.8	5.5	6.2	6.9	7.6	8.3	8.9	9.6
60	1.5	2.3	3.0	3.8	4.5	5.3	6.0	6.8	7.5	8.3	9.0	9.8	10.5
65	1.6	2.4	3.3	4.1	4.9	5.7	6.5	7.3	8.1	8.9	9.8	10.6	11.4
70	1.8	2.6	3.5	4.4	5.3	6.1	7.0	7.9	8.8	9.6	10.5	11.4	12.3
75	1.9	2.8	3.8	4.7	5.6	6.6	7.5	8.4	9.4	10.3	11.3	12.2	13.1
80	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0	12.0	13.0	14.0
85	2.1	3.2	4.3	5.3	6.4	7.4	8.5	9.6	10.6	11.7	12.8	13.8	14.9
90	2.3	3.4	4.5	5.6	6.8	7.9	9.0	10.1	11.3	12.4	13.5	14.6	15.8
95	2.4	3.6	4.8	5.9	7.1	8.3	9.5	10.7	11.9	13.1	14.3	15.4	16.6
100	2.5	3.8	5.0	6.3	7.5	8.8	10.0	11.3	12.5	13.8	15.0	16.3	17.5
105	2.6	3.9	5.3	6.6	7.9	9.2	10.5	11.8	13.1	14.4	15.8	17.1	18.4
110	2.8	4.1	5.5	6.9	8.3	9.6	11.0	12.4	13.8	15.1	16.5	17.9	19.3
115	2.9	4.3	5.8	7.2	8.6	10.1	11.5	12.9	14.4	15.8	17.3	18.7	20.1
120	3.0	4.5	6.0	7.5	9.0	10.5	12.0	13.5	15.0	16.5	18.0	19.5	21.0
125	3.1	4.7	6.3	7.8	9.4	10.9	12.5	14.1	15.6	17.2	18.8	20.3	21.9
130	3.3	4.9	6.5	8.1	9.8	11.4	13.0	14.6	16.3	17.9	19.5	21.1	22.8
135	3.4	5.1	6.8	8.4	10.1	11.8	13.5	15.2	16.9	18.6	20.3	21.9	23.6
140	3.5	5.3	7.0	8.8	10.5	12.3	14.0	15.8	17.5	19.3	21.0	22.8	24.5
145	3.6	5.4	7.3	9.1	10.9	12.7	14.5	16.3	18.1	19.9	21.8	23.6	25.4
150	3.8	5.6	7.5	9.4	11.3	13.1	15.0	16.9	18.8	20.6	22.5	24.4	26.3
155	3.9	5.8	7.8	9.7	11.6	13.6	15.5	17.4	19.4	21.3	23.3	25.2	27.1
160	4.0	6.0	8.0	10.0	12.0	14.0	16.0	18.0	20.0	22.0	24.0	26.0	28.0
165	4.1	6.2	8.3	10.3	12.4	14.4	16.5	18.6	20.6	22.7	24.8	26.8	28.9
170	4.3	6.4	8.5	10.6	12.8	14.9	17.0	19.1	21.3	23.4	25.5	27.6	29.8
175	4.4	6.6	8.8	10.9	13.1	15.3	17.5	19.7	21.9	24.1	26.3	28.4	30.6
180	4.5	6.8	9.0	11.3	13.5	15.8	18.0	20.3	22.5	24.8	27.0	29.3	31.5
185	4.6	6.9	9.3	11.6	13.9	16.2	18.5	20.8	23.1	25.4	27.8	30.1	32.4

Infusion rate (ml/hr)

3 Find infusion rate at the intersection of the patient's body weight and desired dose.

e.g. Patient weight : 80 kg
Desired dose : 0.7 mcg/kg/hr
Infusion rate : 7 ml/hr

Dilute prior to Use

dexdor® concentrate can be diluted in glucose 50 mg/ml (5%), Ringer's, mannitol or sodium chloride 9 mg/ml (0.9%) solution for injection to achieve the required concentration of either 4 mcg/ml (see seperate dosing sheet) or 8mcg/ml prior to administration.

Do not use a loading dose

Use of loading dose is not recommended, propofol or midazolam may be administered if needed until the clinical effects of ***dexdor®*** are established.

Recommended starting dose is 0.7 mcg/kg/hr

Patients already intubated and sedated may switch to an initial infusion rate of 0.7 mcg/kg/hr. This should normally be calculated on the patient's actual body weight and not their ideal body weight.

Titrate in a stepwise manner according to response

Adjust stepwise within the dose range 0.2 – 1.4 mcg/kg/hr to achieve the desired level of sedation, dose increments should always be dictated by the needs of the patient.

Users should be ready to use an alternative sedative for acute control of agitation or during procedures, especially for the first few hours of treatment.

dexdor® has a gradual onset of action

dexdor® has an elimination half-life of 2 hrs and a distribution half-life of 6 minutes. Until sedation goals are met you may need to meet these with other agents.

The weaning of other sedatives should be done gradually whilst ***dexdor®*** is being titrated to target sedation, rather than abruptly, which might prompt the patient to become agitated.

Do not exceed maximum dose of 1.4 mcg/kg/hr

If after adequate time at maximum dose you don't see the desired effect, you should re-evaluate the patient. You could consider adding in another sedative agent or alternatively, you could switch to another sedative.

Adjust analgesics

dexdor® has useful analgesic properties. Continue any analgesia when starting ***dexdor®*** and then consider whether you are be able to alter the dose when ***dexdor®*** is established.

Dosing of special populations

Elderly patients	–	No dose adjustment normally needed
Renal Impairment	–	No dose adjustment normally needed
Hepatic Impairment	–	Use with caution, a reduced maintenance dose may be considered
Paediatric	–	The safety and efficacy of ***dexdor®*** in children aged 0 – 18 yrs of age has not been established and therefore its use in this population is not recommended

For further information, please see the SmPC.

dexdor® **100 micrograms per ml concentrate for solution for infusion (dexmedetomidine) Prescribing Information Indication:** Sedation of adult ICU patients requiring sedation level not deeper than arousal in response to verbal stimulation (RASS 0 to -3). **Dosage and administration:** Hospital use only, by healthcare professionals skilled in management of patients requiring intensive care. Administer only as diluted intravenous infusion using controlled infusion device. Dexmedetomidine is very potent and the infusion rate is given per hour. Switch patients already intubated and sedated to dexmedetomidine with initial infusion rate of 0.7 micrograms/kg/h and adjust stepwise within range 0.2 to 1.4 micrograms/kg/h to achieve desired sedation level. Consider lower starting infusion rate for frail patients. After dose adjustment, new steady state sedation level may not be reached for up to one hour. Do not exceed maximum dose of 1.4 micrograms/kg/h. Switch patients failing to achieve an adequate level of sedation with maximum dose to an alternative sedative agent. Loading dose not recommended. Administer propofol or midazolam if needed until clinical effects of ***dexdor®*** established. No experience in use of ***dexdor®*** for more than 14 days. Use for longer than this period should be regularly reassessed. *Elderly:* No dosage adjustment required. *Renal impairment:* No dosage adjustment required. *Hepatic impairment:* Caution advised; consider reduced dose. *Paediatric population:* No recommendation can be made. **Contraindications:** Hypersensitivity. Advanced heart block (grade 2 or 3) unless paced. Uncontrolled hypotension. Acute cerebrovascular conditions. **Warnings and precautions:** Intended for use in intensive care setting, use in other environments not recommended. Continuous cardiac monitoring required. Monitor respiration in non-intubated patients. Do not use as induction agent for intubation or to provide sedation during muscle relaxant use. ***dexdor®*** reduces heart rate and blood pressure but at higher concentrations causes peripheral vasoconstriction and hypertension. Not suitable in patients who will not tolerate lack of deep sedation and easy rousability. Users should be ready to use alternative sedative for acute control of agitation or during procedures, especially during the first few hours of treatment. Caution with: pre-existing bradycardia; high physical fitness and slow resting heart rate; pre-existing hypotension, hypovolaemia, chronic hypotension or reduced functional reserve; severe ventricular dysfunction; the elderly; impaired peripheral autonomic activity (e.g. due to spinal cord injury); ischaemic heart disease or severe cerebrovascular disease; severe hepatic impairment; severe neurological disorders such as head injury and after neurosurgery. Reduce dose or discontinue if signs of myocardial or cerebral ischaemia. Additive effects may occur with other substances with sedative or cardiovascular actions. Some patients receiving ***dexdor®*** have been observed to be arousable and alert when stimulated; this alone should not be considered as evidence of lack of efficacy. Do not use as sole treatment in status epilepticus. Consider possibility of withdrawal reaction if patient develops agitation and hypertension shortly after stopping dexmedetomidine. Not recommended in malignant hyperthermia-sensitive individuals. Discontinue treatment in event of sustained unexplained fever. **Undesirable effects:** *Very common (>1/10):* Bradycardia, hypotension, hypertension. *Common (1>100 to <1/10):* Hyperglycaemia, hypoglycaemia, agitation, myocardial ischaemia or infarction, tachycardia, respiratory depression, nausea, vomiting, dry mouth, withdrawal syndrome, hyperthermia. *Uncommon (1>1,000 to <1/100):* Metabolic acidosis, hypoalbuminaemia, hallucination, atrioventricular block first degree, cardiac output decreased, dyspnoea, apnoea, abdominal distension, drug ineffective, thirst. See SPC for further details. **Legal category:** POM. **Presentations, basic NHS costs and marketing authorization numbers:** ***dexdor®*** 2 ml ampoule x 5, £78.30, EU/1/11/718/001; ***dexdor®*** 2 ml ampoule x 25, £391.50, EU/1/11/718/002; ***dexdor®*** 4 ml vial x 4, £125.28, EU/1/11/718/004; ***dexdor®*** 10ml vial x 4, £313.20, EU/1/11/718/006. **Distributed by:** Orion Pharma (UK) Ltd. Oaklea Court, 22 Park Street, Newbury, Berkshire, RG14 1EA, UK. Full prescribing information is available on request. ***dexdor®*** is a registered trademark. Date of Prescribing Information: Dec 2014.

Adverse events should be reported. Reporting forms and information can be found at www.mhra.gov.uk/yellowcard. Adverse events should also be reported to Orion Pharma (UK) Ltd on 01635 520300.

Reference:
dexdor® Summary of Product Characteristics

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