

Tema:

DEXMEDETOMIDINA EN RATAS

Fechas: 24 – 26 mayo 2011

Estimados todos,

Estoy interesado en conocer a que dosis utilizáis habitualmente la dexmedetomidina en combinación con la Ketamina en ratas.

Gracias de antemano. Un saludo.

Miguel

Usamos dosis de 75 -100 mg/kg Ketamine + 0.25 - 0.5 mg/kg Dexmedetomidine
IP

Saudações

Luis

Hola Miguel,

Aunque no he realizado una gran cantidad de anestésias con dexmedetomidina, teniendo en cuenta que el precio de la medetomidina y sus diferentes formulaciones veterinarias se ha reducido bastante y las ventajas que en principio te puede aportar la dexmedetomidina no son mucho mas espectaculares, cuando he hecho uso de ella he empleado los rangos 75-100 (ket) y 0.25-5 (Dex) mg/kg.

Alguna bibliografía que te puede ayudar con esto o a decidirte al menos por tu rango:

Artículos:

Ruzza A, Vespignani R, Czer LS, De Robertis M, Wu GN, Trento A. Heterotopic heart transplantation in rats: improved anesthetic and surgical technique. Transplant Proc. 2010 Nov;42(9):3828-32.

Dexmedetomidine + ketamine
75 mg/kg + 0.25 mg/kg

En internet:

1) <http://web.jhu.edu/animalcare/rdf/index.html>

Ketamine + Dexmedetomidine	100 (K) + 0.5 (D) IP	May not produce adequate anesthesia for major procedures. Can be partially reversed with Atipamezole (0.1-1.0 IM or IP).	Retro-orbital bleeding Use with topical proparacaine ophthalmic
-------------------------------	-------------------------------	--	--

2) http://www.dar.emory.edu/VETCARE/anesthetic_injection.php

Common Injectable Anesthetic Doses for Rodents and Rabbits (in mg/kg, unless otherwise noted)

Agent	Guinea Pig	Mouse	Rat	Rabbit
Dexmedetomidine + ketamine	0.25 IP + 40 IP	0.5 IP + 75 IP	0.25 + 75 IP	0.25 + 25 IM

3) http://www.utsouthwestern.edu/vgn/images/portal/cit_56417/5/54/537421ARC_Recommended_Anesthetics_in_Rodents.pdf

ARC Recommended Rat Anesthesia

Ketamine-Dexmedetomidine (Dexdomitor) Cocktails

Rat Cocktail #1

	Drug Stock Concentration (mg/ml)	Volume Used for Cocktail	Volume of Cocktail Administered to Rat	Dose Administered to Rat
Ketamine	100 mg/ml	0.8 ml	-	50 mg/kg
Dexmedetomidine	0.5 mg/ml	0.8 ml	-	0.25 mg/kg
Saline	Sterile, isotonic	2.4 ml	-	
Combination	Total	4 ml	0.25 ml / 100 gm IP	

Rat Cocktail #2:

	Drug Stock Concentration	Volume Used for Cocktail	Volume of Cocktail Administered to Rat	Dose Administered to Rat
Ketamine	100 mg/ml	1.2 ml	-	75 mg/kg
Dexmedetomidine	0.5 mg/ml	0.8 ml	-	0.25 mg/kg
Saline	Sterile, isotonic	2 ml	-	
Combination	Total	4 ml	0.25 ml / 100 gm IP	

Atipamezole (= Antisedan) Reversal Agent

This anesthetic reversal agent is an alpha-2 antagonist. It is highly recommended to use with **Both Rat Cocktails # 1 & 2**. Rats may sleep for 4-5 hours if reversal agent is not administered.

It is used to reverse the effects of xylazine or dexmedetomidine.

It is available as a 5 mg/ml injectable solution. It is available from ARC pharmacy (82592).

It is recommended to make a 0.25 mg/ml stock solution (from 5 mg/ml solution in purchased bottle). ARC may consider selling this diluted stock solution to labs.

To make 0.25 mg/ml stock solution, make a 1:20 dilution: Add 0.5 ml Atipamezole to 9.5 ml sterile water or sterile saline.

Rat Dosage: 1 mg/kg

Give 0.6 ml SC or IP of 0.25 mg/ml stock solution per 150 gm rat.

Note: SC or IP fluid support following procedure is recommended with use of these cocktails. Less bladder tone is evident and rats urinate frequently while anesthetized.

4) www.utsouthwestern.edu/.../544755ARC_Rodent_Anesthesia.doc

**Para Ratones:
Ketamine-Dexmedetomidine (Dexdomitor®) Cocktail 4,5**

Recommended dose range: Ketamine 50-75 mg/kg IP and Dexmedetomidine 0.5 – 1.0 mg/kg IP³

Mouse Sample Recipe #1 for KETAMINE and DEXmedetomidine

	Drug stock concentration ¹ (mg/ml)	Volume used for cocktail	Volume of cocktail administered to mouse	Dose administered to mouse
Ketamine	100 mg/ml	0.2 ml	-	50 mg/kg
Dexmedetomidine	0.5 mg/ml	0.4 ml	-	0.5 mg/kg
Saline	Sterile, isotonic	7.4 ml	-	-
Combination Cocktail		8 ml total	0.2 ml / 10 g	-

Mouse Sample Recipe #2 for KETAMINE and DEXmedetomidine

	Drug stock concentration ¹ (mg/ml)	Volume used for cocktail	Volume of cocktail administered to mouse	Dose administered to mouse
Ketamine	100 mg/ml	0.3 ml	-	75 mg/kg
Dexmedetomidine	0.5 mg/ml	0.8 ml	-	1.0 mg/kg
Saline	Sterile, isotonic	6.9 ml	-	-
Combination Cocktail		8 ml total	0.2 ml / 10 g	-

¹ Compiled from ACLAM anesthesia text, lab animal formulary, and other sources.

² Check drug concentration on bottle. Start with the correct concentration.

Ketamine is packaged at 10, 50, or 100 mg/ml.

Xylazine may be purchased at either 20 mg/ml or 100 mg/ml.

³ Ket:Xyl cocktails should be redosed 1st time with ketamine only at ½ dose (mg/kg). If it is necessary to redose a 2nd time, use ½ dose of cocktail (ml/kg).

⁴ Medetomidine (Domitor®) concentration is 1.0 mg/ml, but drug is being phased out and replaced with Dexmedetomidine (Dexdomitor®) which is packaged at 0.5 mg/ml. They are both dosed at 0.5 mg/kg in mice.

⁵ Atipamezole (Antisedan®) is package at 5 mg/ml. It will reverse medetomidine and dexmedetomidine in rats and mice at a dose of 0.1 to 1.0 mg/kg SC or IP

Avertin: The typical mouse dose for "Avertin" is 0.2 ml/10 grams IP of a 1.25% solution. This equates to administration of approximately 240 mg/kg of Avertin.

Saludos desde Carolina del Norte.

Javier

Hola a todos,

Quería añadir al mensaje de Javier que la medetomidina es una mezcla racémica al 50% de dexmedetomidina y levomedetomidina. Esta última tiene un efecto sedante y analgésico nulo o muy escaso por lo que cuando usamos medetomidina estamos empleando, como fármaco activo, realmente dexmedetomidina. Al ser al 50% quiere decir que donde dábamos una dosis de, por ejemplo, 0,1 mg/kg de medetomidina, deberíamos administrar la mitad de dexmedetomidina (0,05 mg/kg) para obtener un efecto equivalente. Afinando un poco, nosotros damos realmente un 60% de la dosis porque 'parece' que el 50% se queda escaso en la comparación. En resumen, todos llevamos empleando la dexmedetomidina desde que comenzamos a usar medetomidina y solo debemos ajustar la dosis. En resumen, si queréis pasar de una a otra 'presentación' calcular un 50% de dosis de la que empleabais de medetomidina.

Un saludo

Ignacio
