PROTOCOLOS DE INSEMINACION A TIEMPO FIJO (IATF) EN BOS TAURUS

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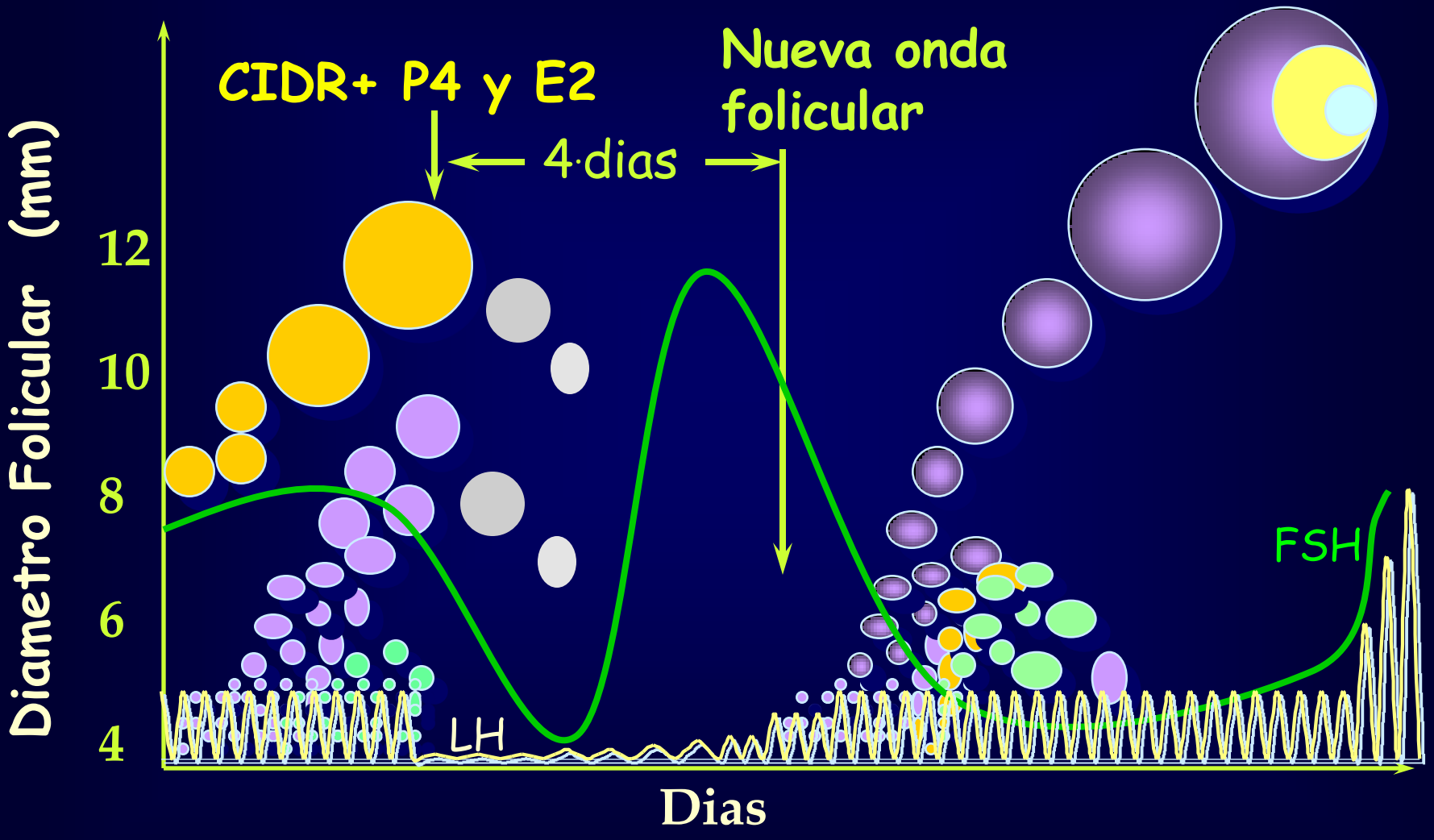
Control del ciclo estral

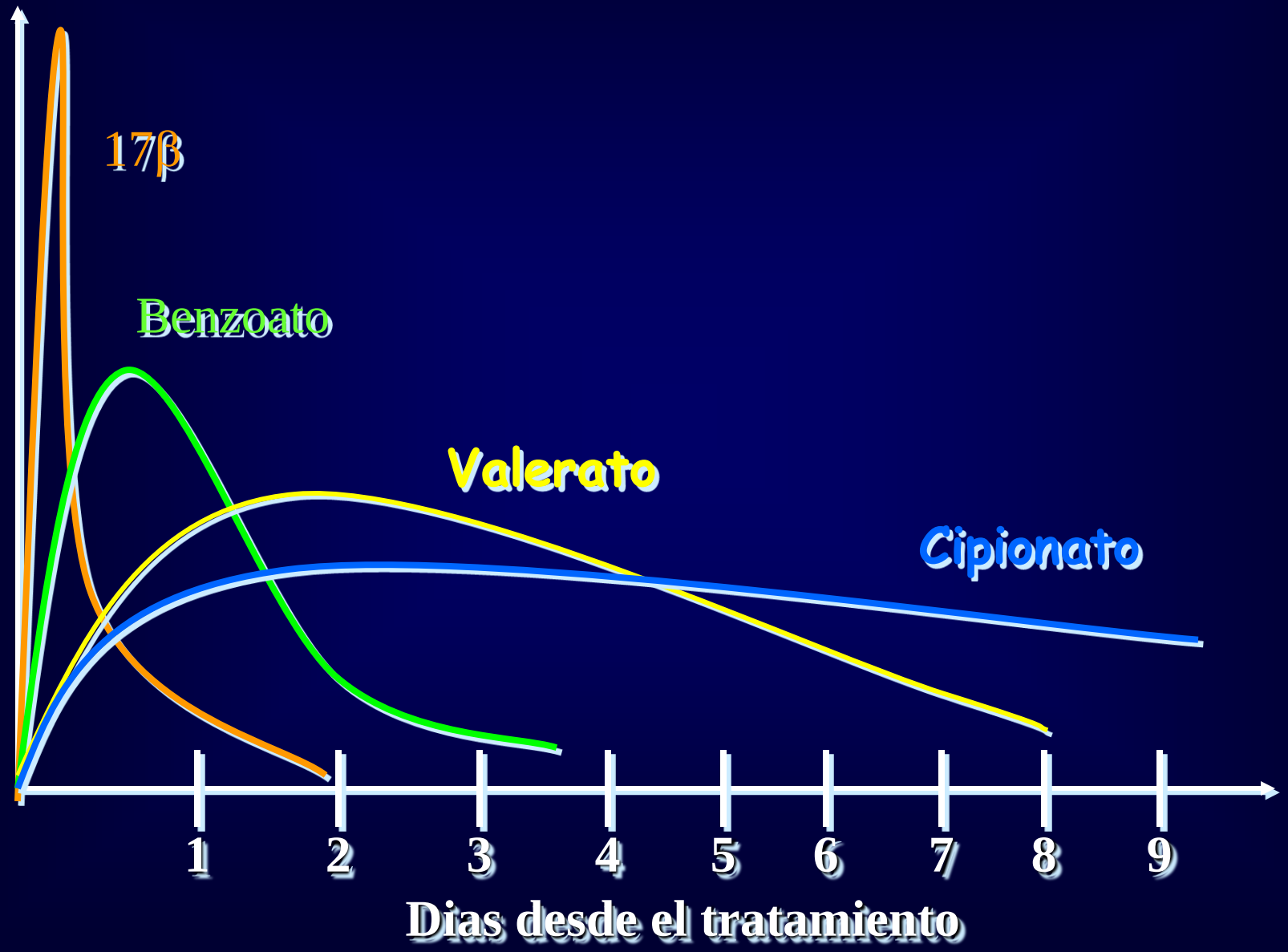
- Fase luteal:
  - **Prostaglandina F2a (PGF)**
  - **Progestagenos**: MGA, PRID, CIDR
- Desarrollo folicular:
  - **Estradiol** (Bo et al., 1995)
  - **GnRH** (Twagiramungu et al., 1995)
  - **pLH** (Martinez et al., 1999)
  - **hCG** (Lopez-Gatius, 2000)
  - **Ablacion folicular** (Bergfelt et al., 1994)

Estradiol y Progesterona

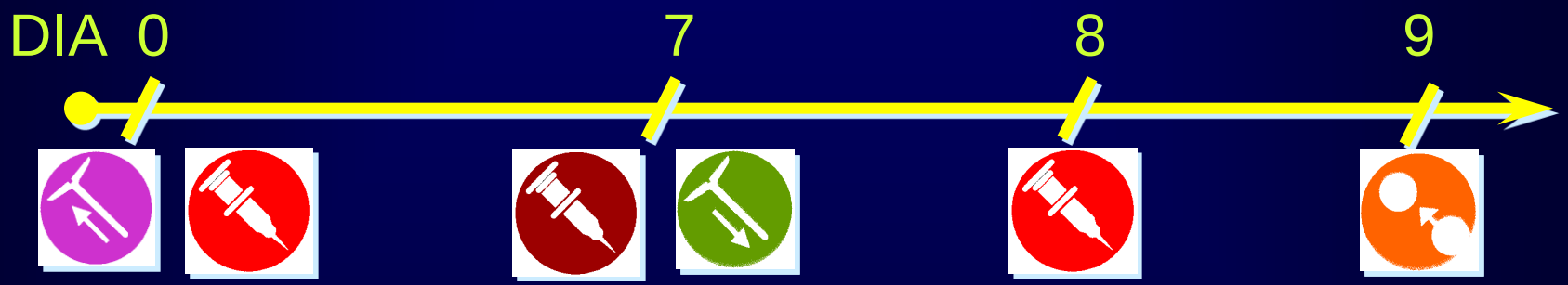


Bo et al., 1995

Concentraciones Plasmaticas



Protocolo de IATF (Progesterona & Estrogeno)



Insertar CIDR
Inyectar
2 mg EB
o 5 mg E-17B

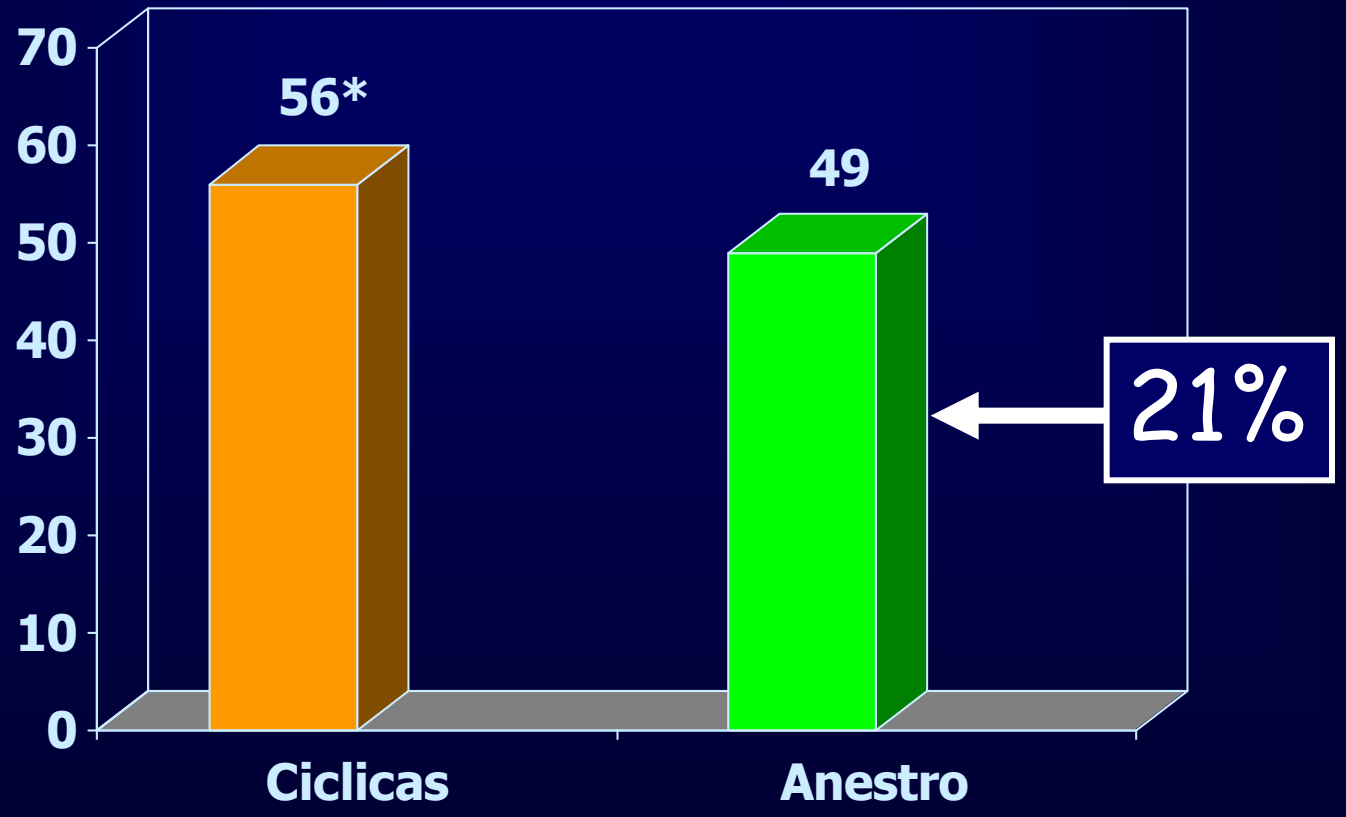
Remover CIDR
Inyectar PGF2α

1 mg EB

IATF

Bo et al., 1995; Martinez et al., 2005

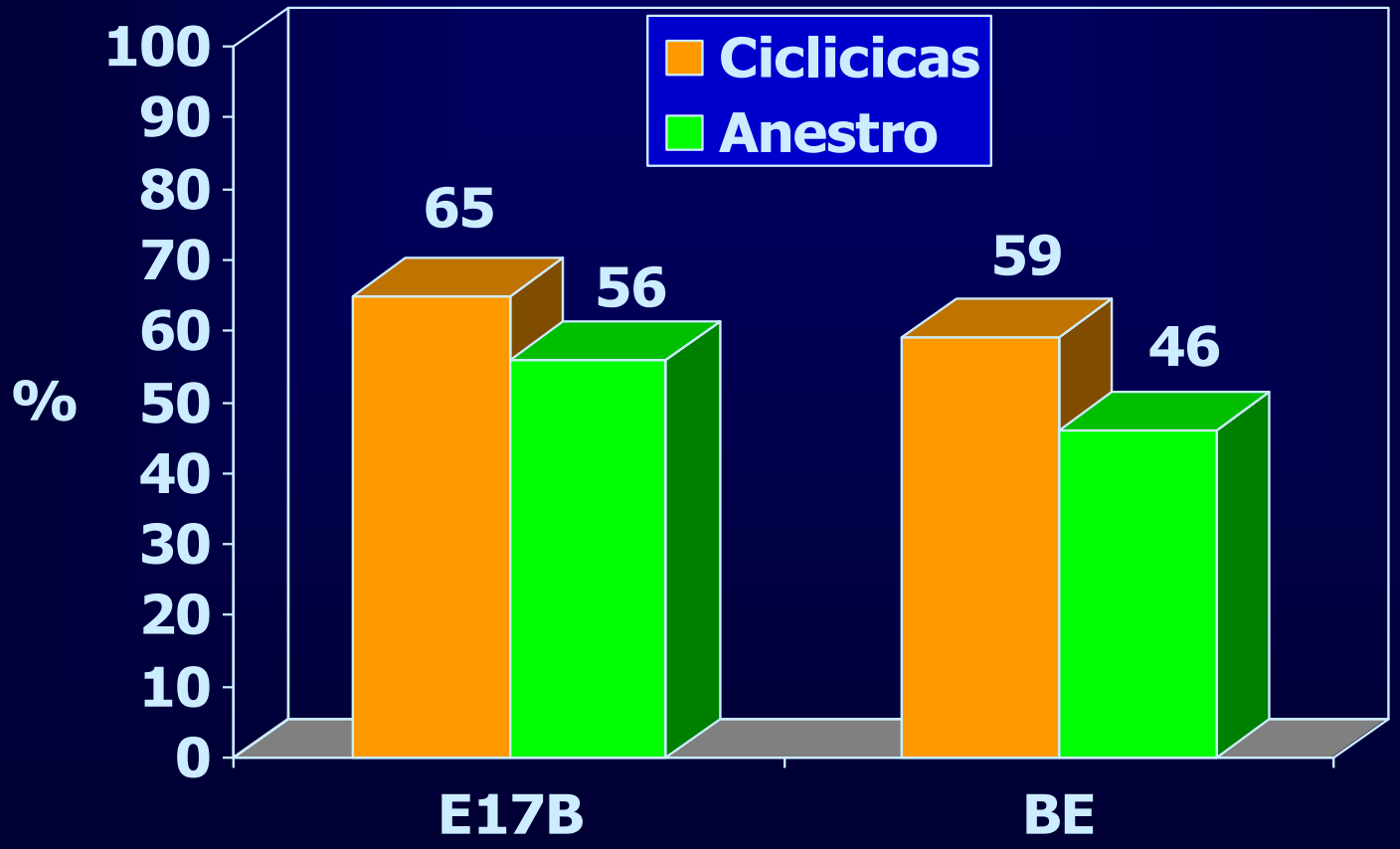
Resultados de IA a Tiempo Fijo (Ciclicas vs. anestro)



P < 0.01

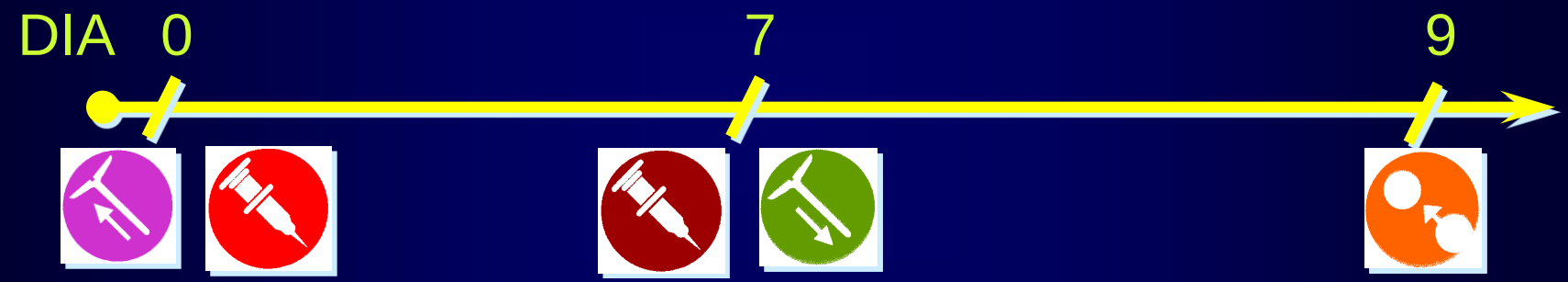
n = 3035 vaquillonas de carne

E17B vs. EB
Tasas de preñez



n = 1428 vaquillonas

Protocolo de IATF (Progesterona & Estrogeno)



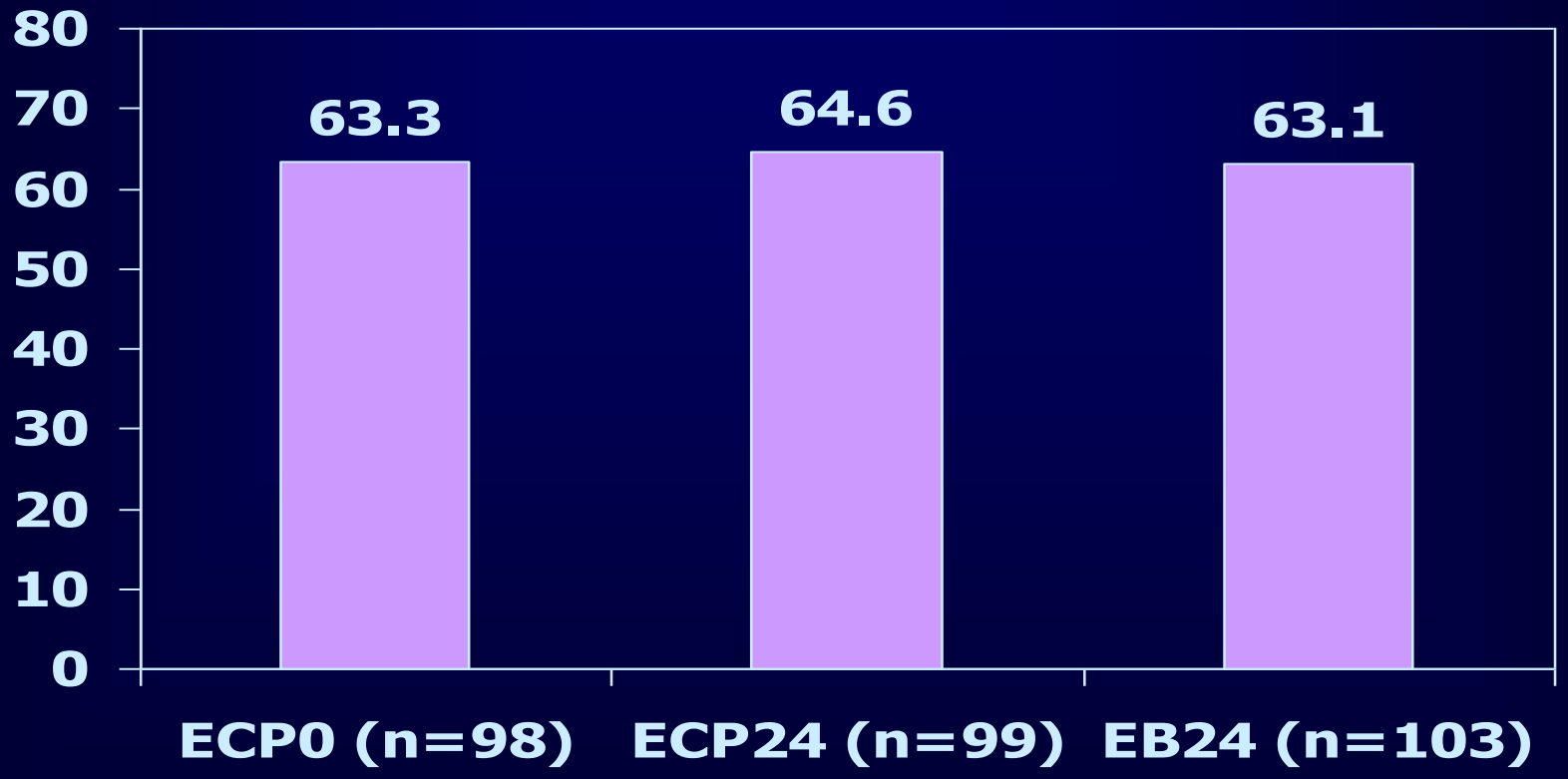
Insertar CIDR
Inyectar
5 mg E-17B

Remover CIDR
Inyectar PGF
0.5 mg ECP

IATF

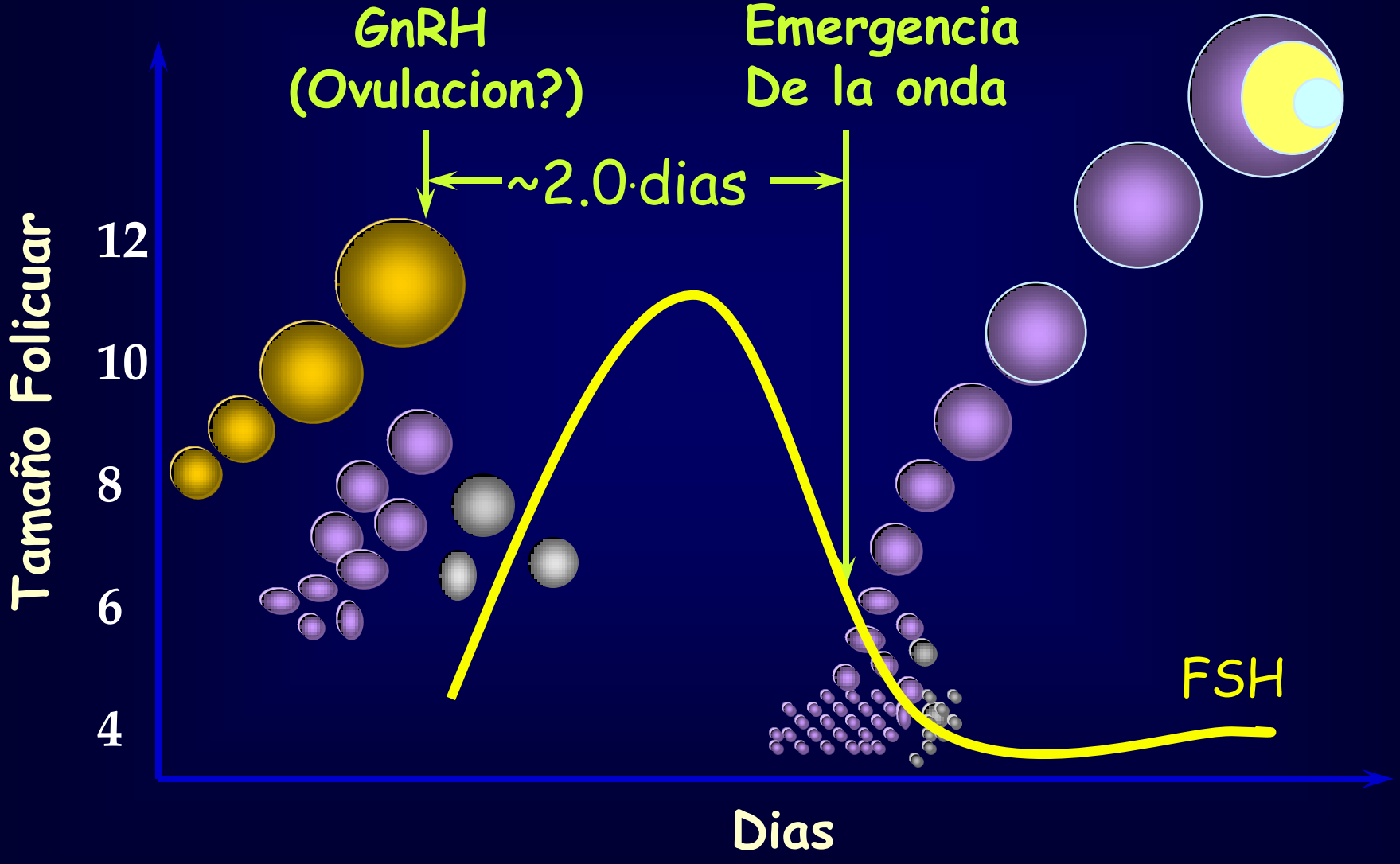
Colazo et al., 2003

PORCENTAJES DE PREÑEZ



Colazo et al., 2003

GnRH or pLH



Martinez et al., 1999

Inicio de la onda folicular después del tratamiento con GnRH or pLH

	Dia	-2	-1	Tx	+1	+2	+3	+4	+5	+6
Día 3										
Ov	(14)					10	1	1	2	
No	(4)						1		2	1
Día 6										
Ov.	(14)				1	11	2			
No	(4)					3	1			
Día 9										
Ov.	(8)				1	7				
No	(10)	2	2		4	1	1			
Todos										
Ov.	(36)				2	28	3	1	2	
No	(18)	2	2		4	4	3		2	1

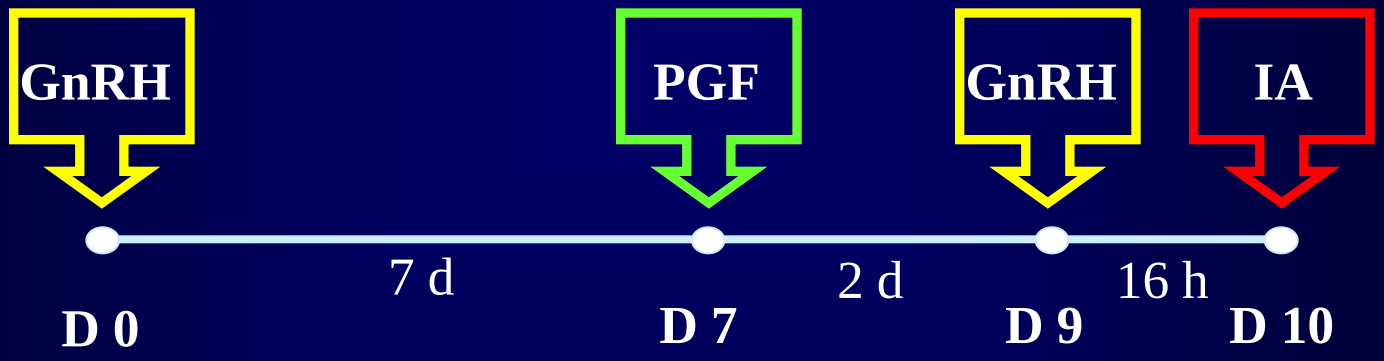
Martinez et al., 1999

Effecto de la presynchronizacion y ciclicidad sobre la respuesta ovulatoria a la primera GnRH en el ganado tratado con un protocolo a base de GnRH y PGF.

Animal category	Presynchronization		Cyclicity status		Reference
	Yes	No	Cyclic	Acyclic	
Lactating dairy cows	--	--	56/146 (38%)	17/20 (85%)	Colazo et al., 2009
Lactating dairy cows	149/241 (62%)	--	--	--	Colazo et al., 2013a
Lactating dairy cows	99/217 (46%)	110/391 (28%)	150/501 (30%)	59/107 (55%)	Colazo et al., 2013b
Dairy heifers	--	27/91 (30%)	--	--	Colazo and Ambrose, 2011
Suckled beef cows	59/79 (75%)	39/80 (49%)	--	--	Small et al., 2009
Suckled beef cows	99/129 (77%)	72/131 (55%)	--	--	Small et al., 2009
Beef heifers	78/128 (61%)	--	--	--	Small et al., 2009
Beef heifers	29/49 (59%)	30/49 (61%)	--	--	Colazo et al., 2007

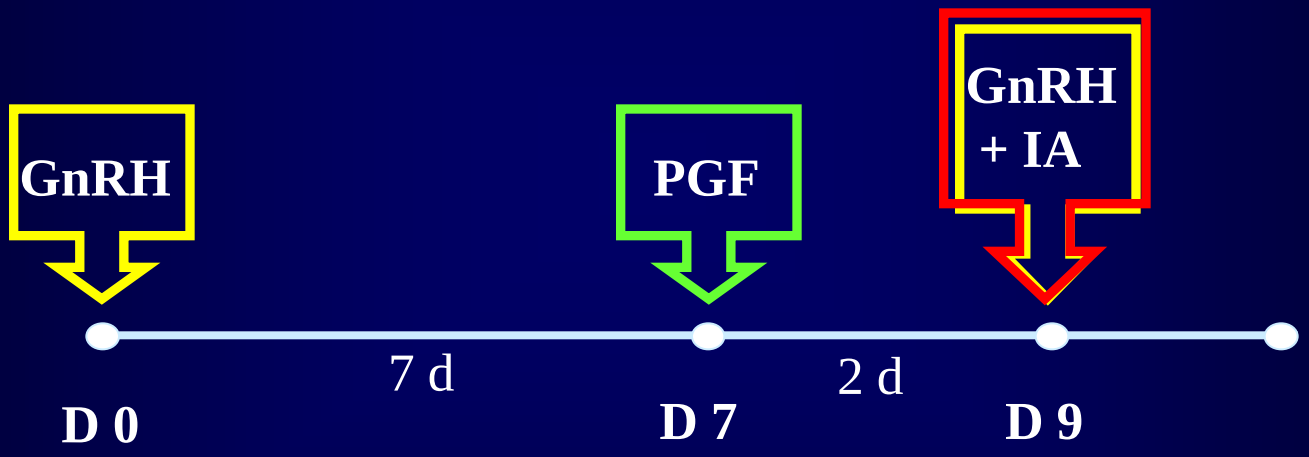
37%

7-d OVSYNCH



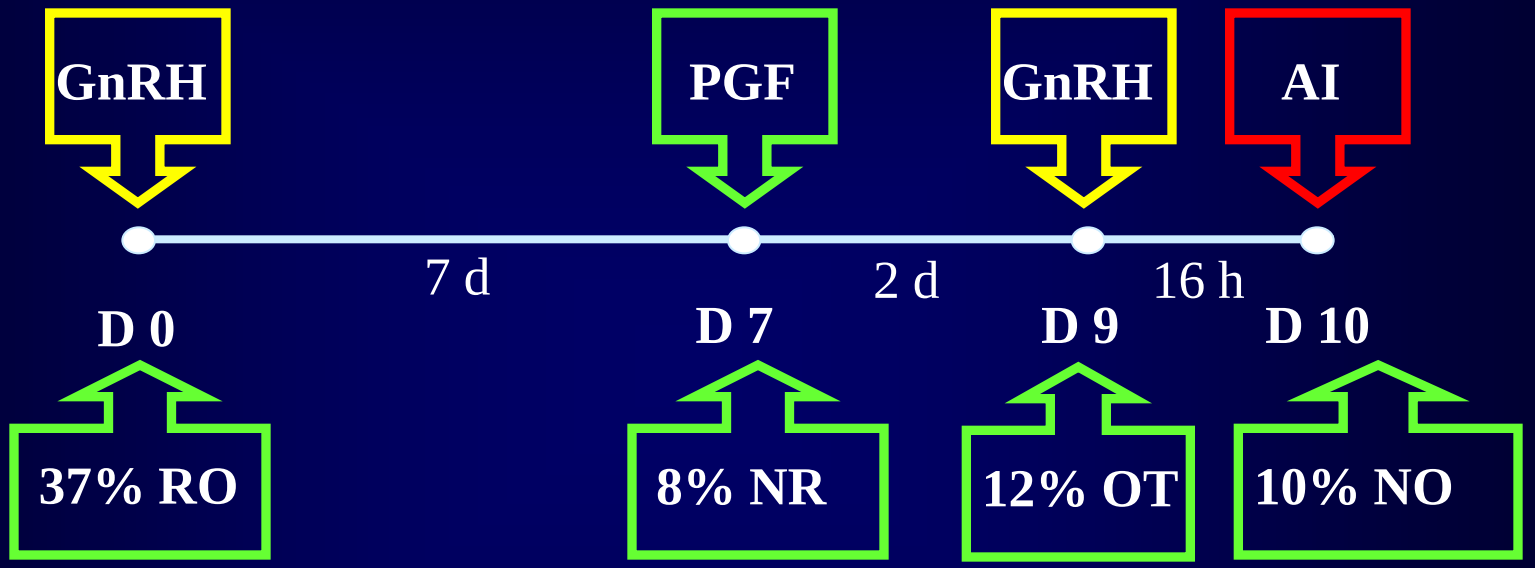
Pursley et al., 1995

7-d COSYNCH



Geary et al., 1998

7-d OVSYNCH



Porcentaje de conception = 28-35%

Un problema de asincronia!

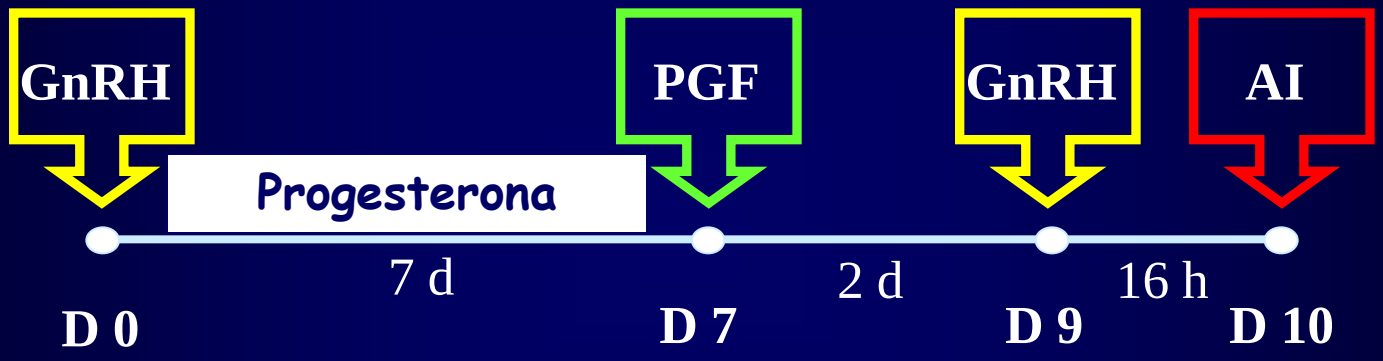
N = 744

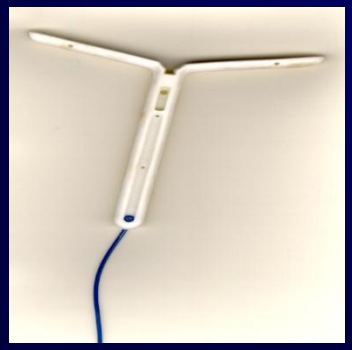
Colazo et al., 2009; 2013; datos no publicados

Mejorando la fertilidad de los protocolos basados en GnRH

- Incorporar un dispositivo con P4
- Presincronizacion
  - 2 dosis de PGF
  - G6G or Doble Ovsynch
  - Presincronizacion con P4

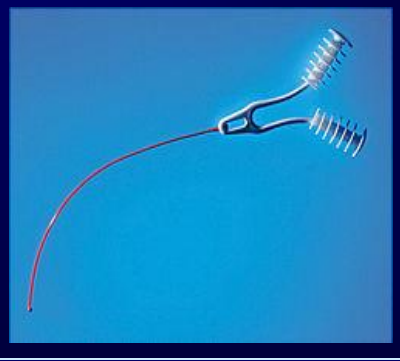
7-d OVSYNCH + P4





CIDR

PRID



CUE-MATE

Preñez en animales tratados con Cosynch or Cosynch + CIDR

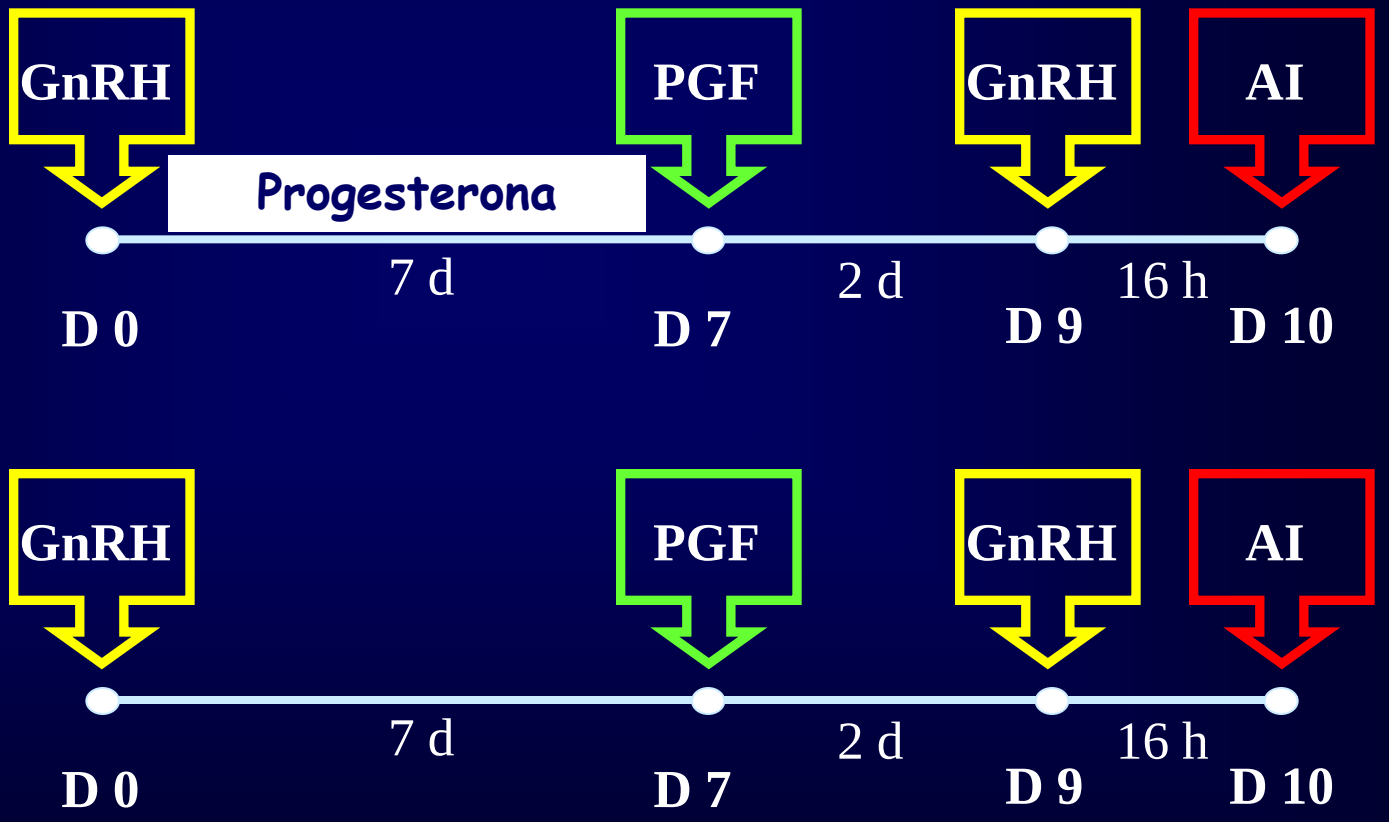
Categoria	*Cosynch*	*Cosynch+CIDR*
Vacas	n = 71	n = 77
	45.1%	42.9%
Vaquillonas	n = 23	n = 25
	39.1%[a]	68.0%[b]

[ab] (P<0.05).

Martinez et al., 2000

PRID

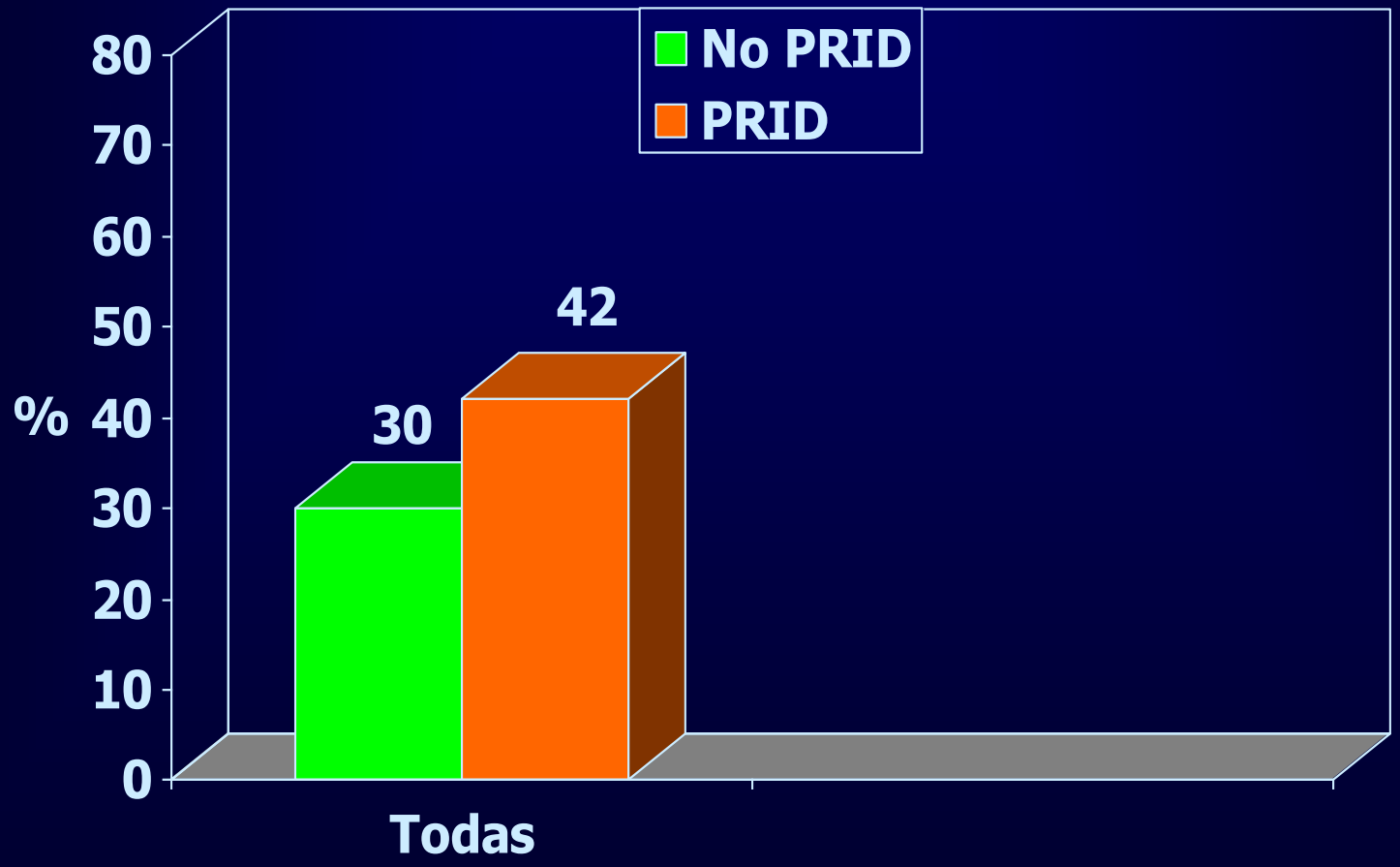
7-d OVSYNCH +/- P4



N = 608; Presincronizadas N=217

Colazo et al., 2013

Porcentaje de preñez: Efecto del PRID



N = 608; P <0.05

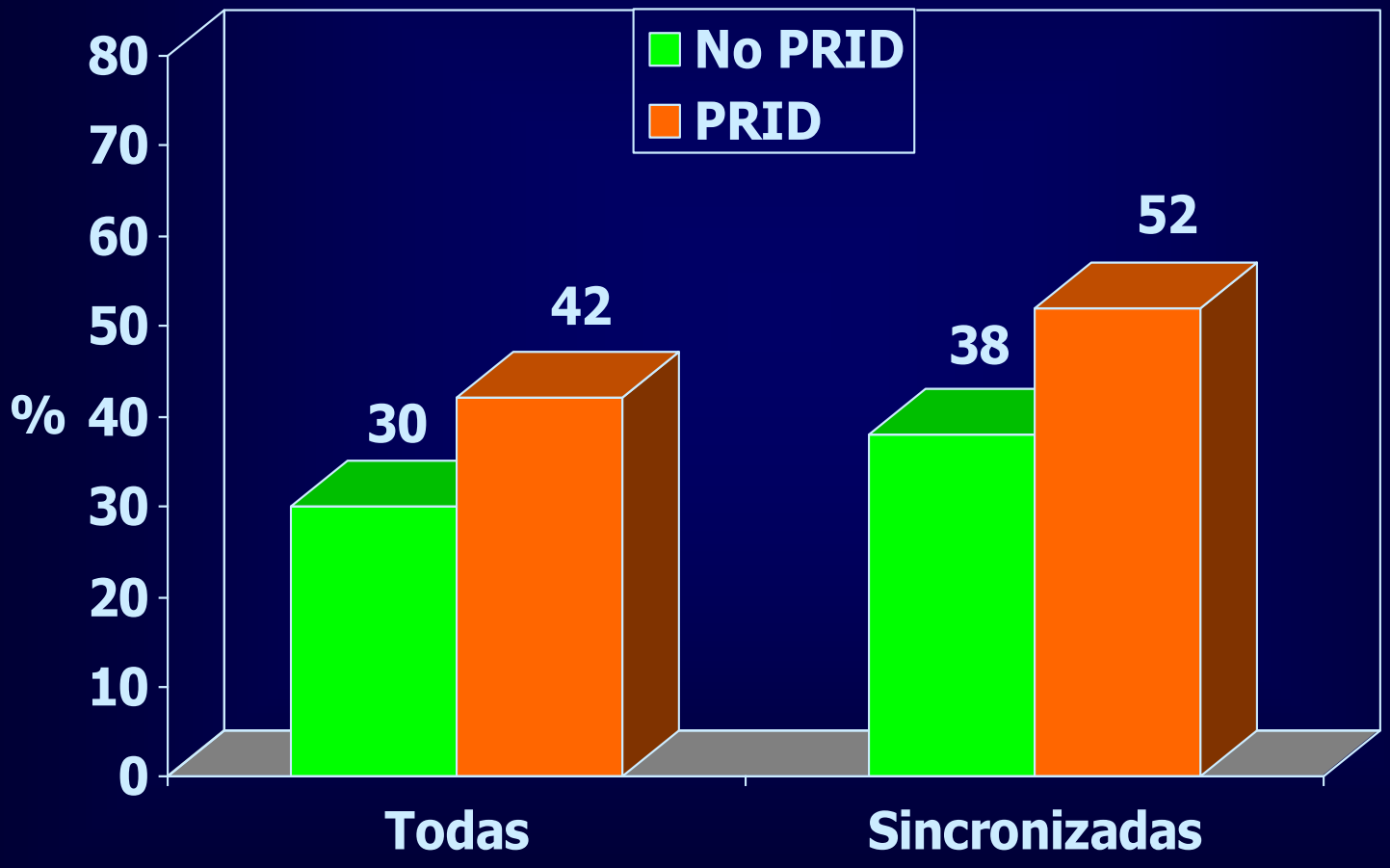
Colazo et al., 2013

	Ovsynch		Ovsynch + PRID
Ov. A la 1° GnRH	35%		33%
Ov. A la 2° GnRH	83%		86%
Ov. Antes IATF	11%	*	6%
No resp. PGF	4%		3%
Doble Ov.	11%		10%

N = 608

Colazo et al., 2013

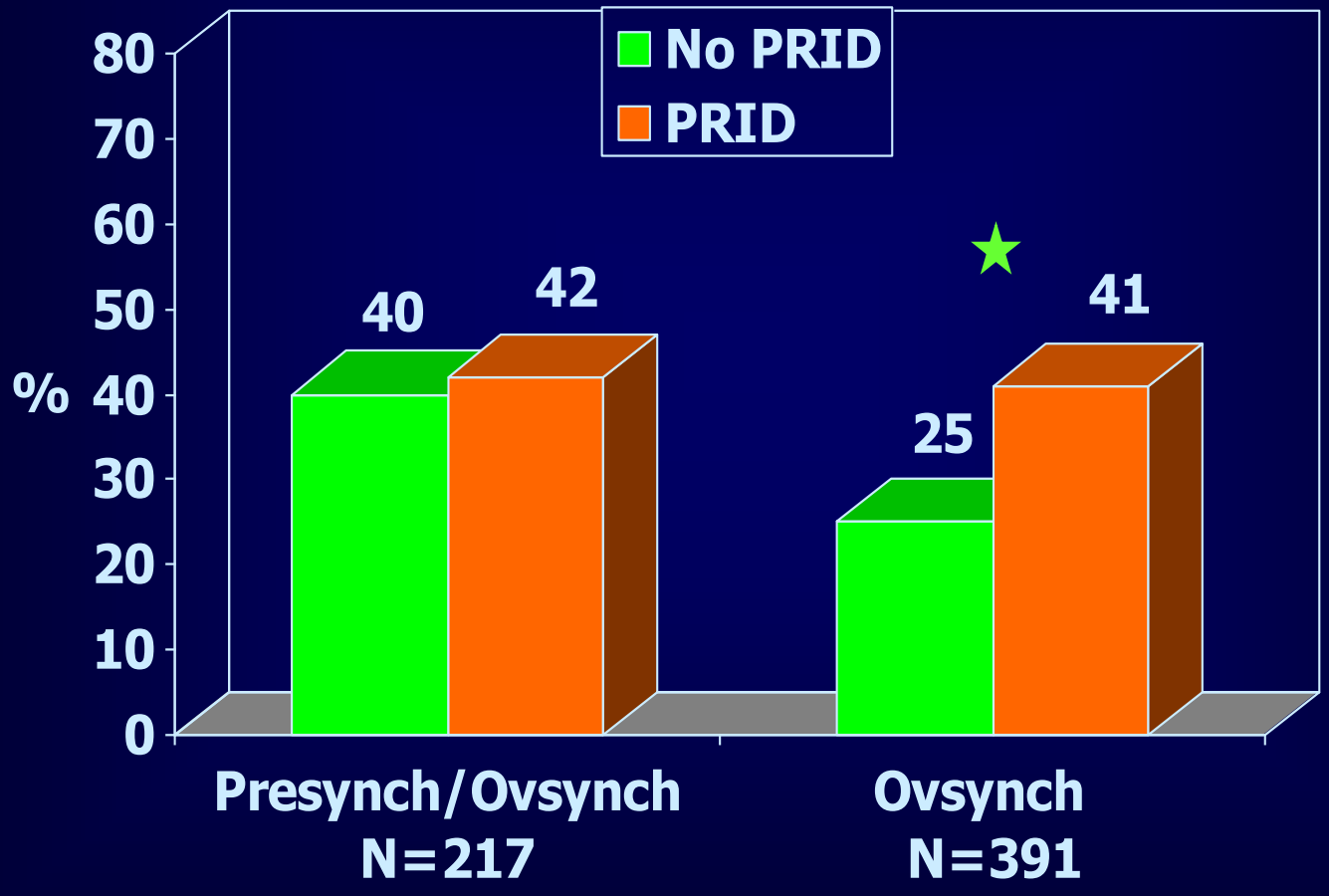
Porcentaje de preñez: Efecto del PRID



N = 608; P <0.05

Colazo et al., 2013

Tratamiento con PRID y protocolo IATF



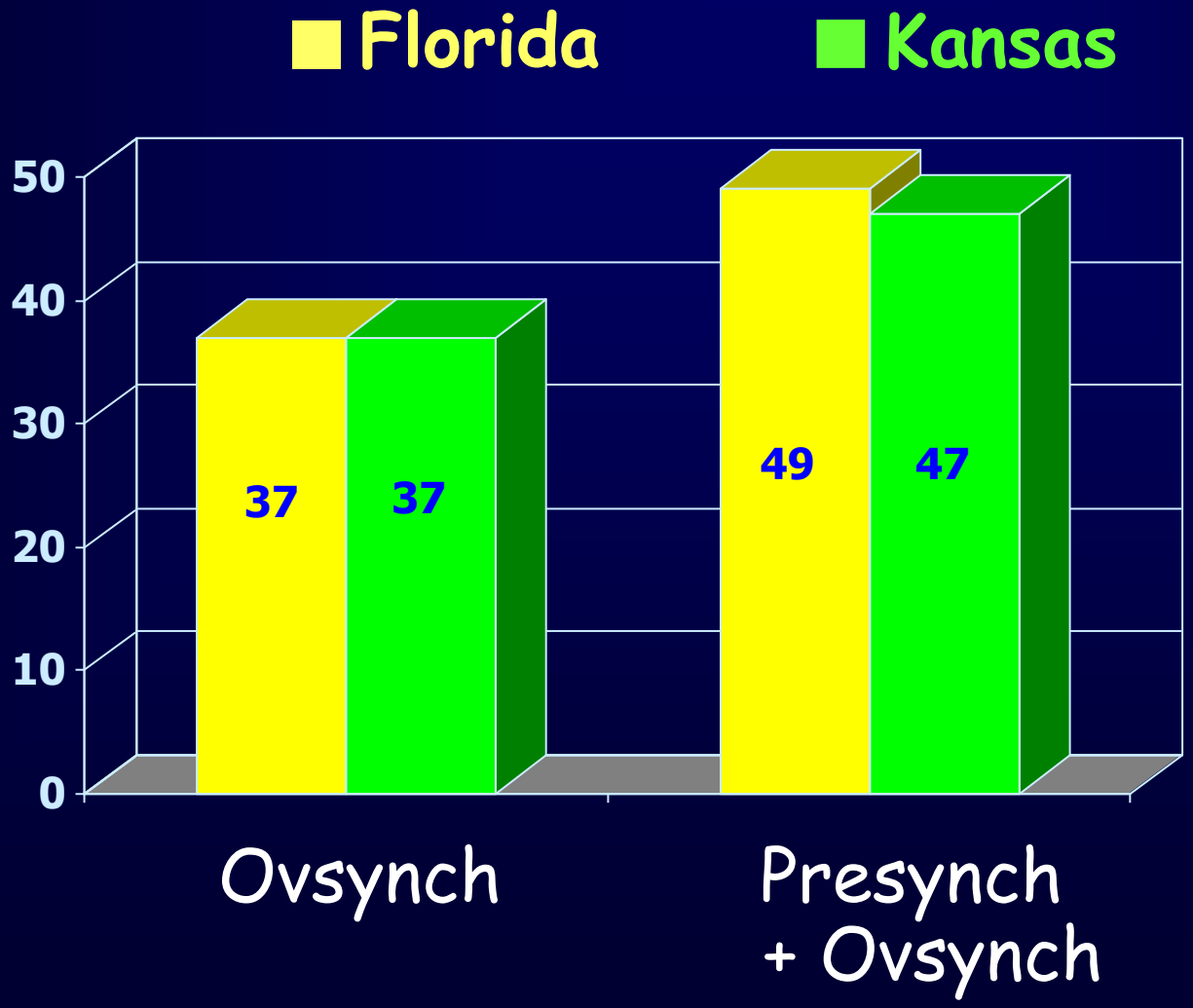
Interacion P<0.05

Colazo et al., 2013

PRESYNCH-OVSYNCH 14/11 d

Dom	Lun	Mar	Mie	Jue	Vie	Sab
				PGF		
				PGF		
	GnRH					
	PGF		GnRH	IATF		

Porcentaje de preñez (%)



Moreira et al., 2002; El-Zarkouny et al., 2004

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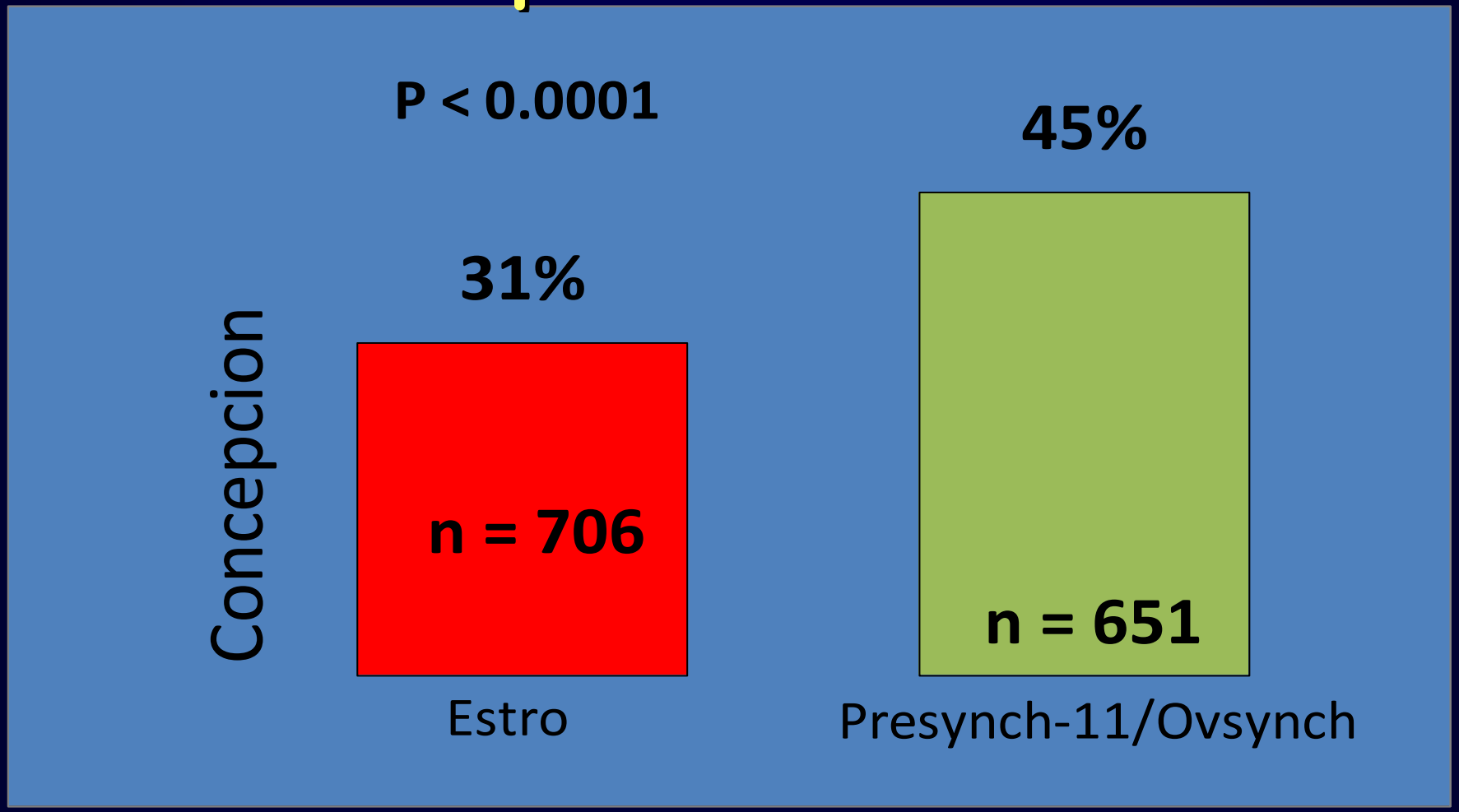
	Ovsynch		Presynch + Ovsynch
Ov. a la 1° GnRH	39%	*	61%
Ov. a la 2° GnRH	83%		87%
Ov. antes IATF	12%	*	5%
No resp. PGF	8%		5%
Doble Ov.	13%		15%

N = 744

Colazo et al., 2009; 2013; datos no publicados

Porcentaje de concepcion a la primera IA



Strickland et al., 2010

G6G

Dom	Lun	Mar	Mie	Jue	Vie	Sab
	PGF		GnRH			
		GnRH				
		PGF		GnRH	IATF	

Bello et al., 2006

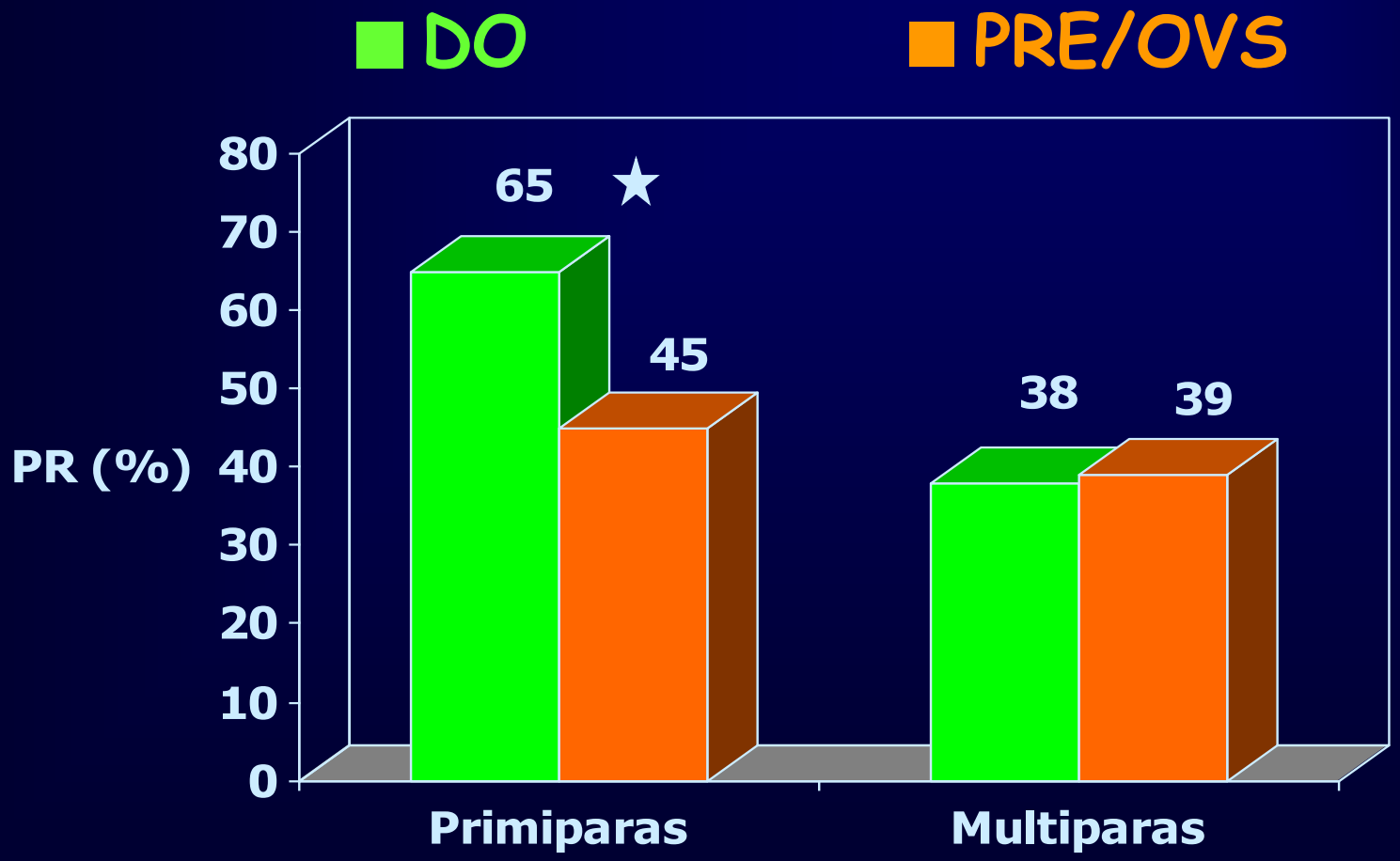
	Ovsynch		G6G
Ov. a la 1° GnRH	54%	*	85%
No resp. PGF	31%	*	4%
Sincronizadas	69%	*	92%
Preñadas	27%	*	50%

Bello et al., 2006

DOBLE OVSYNCH

Dom	Lun	Mar	Mie	Jue	Vie	Sab
					GnRH	
					PGF	
	GnRH					
	GnRH					
	PGF		GnRH	IATF		

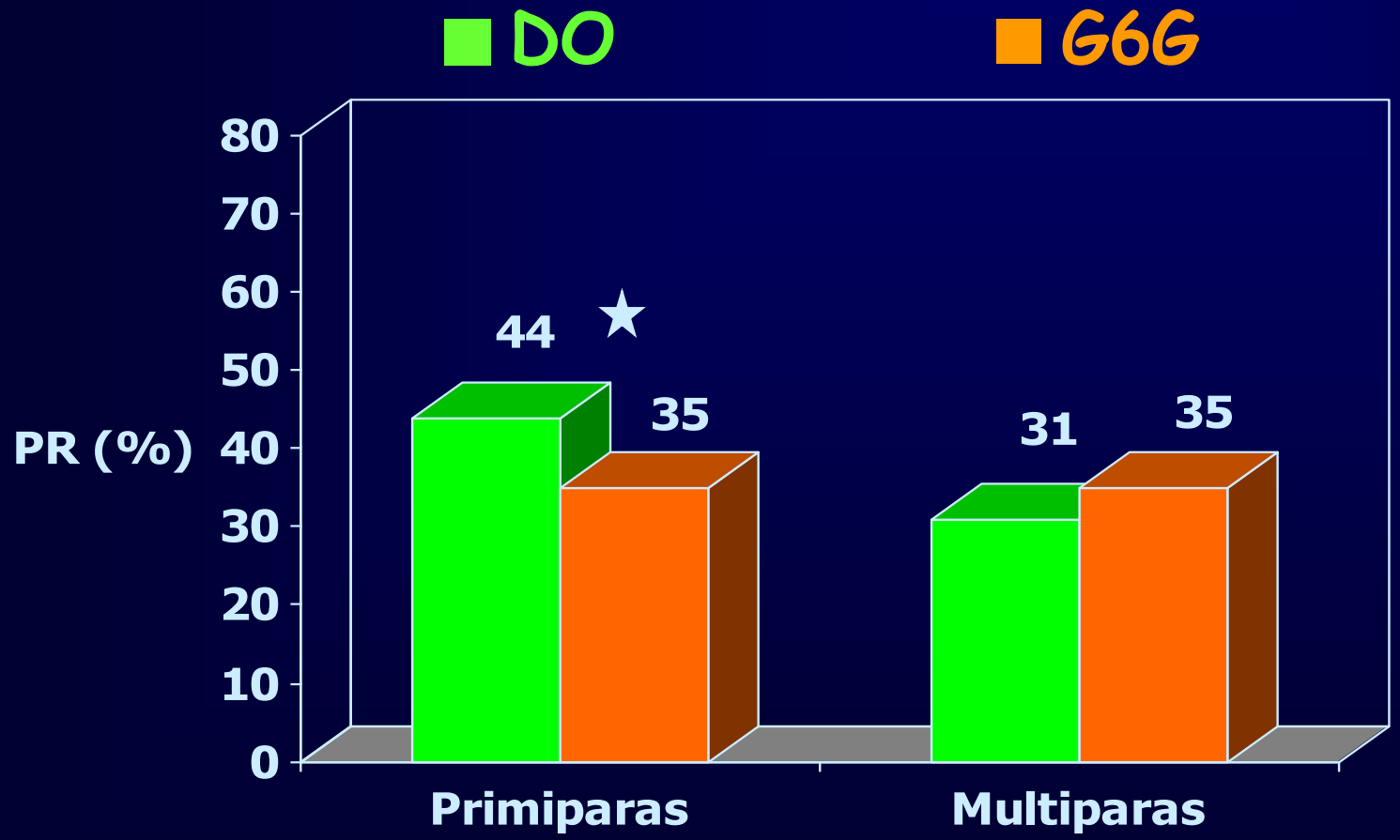
Doble Ovsynch vs Presynch/Ovsynch



n = 337

Souza et al., 2008

Doble Ovsynch vs. G6G

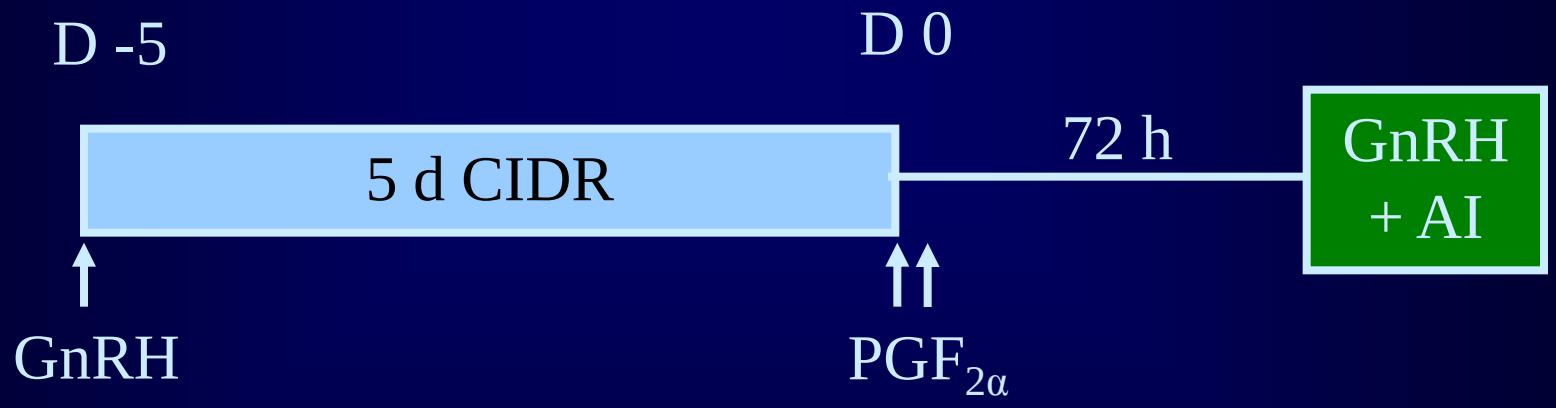


n = 6787 IA

Astiz and Fargas, 2013

Mejorando la fertilidad de los procolos a base de GnRH

-5-d Cosynch + CIDR-



Bridges et al., 2008

CIDR

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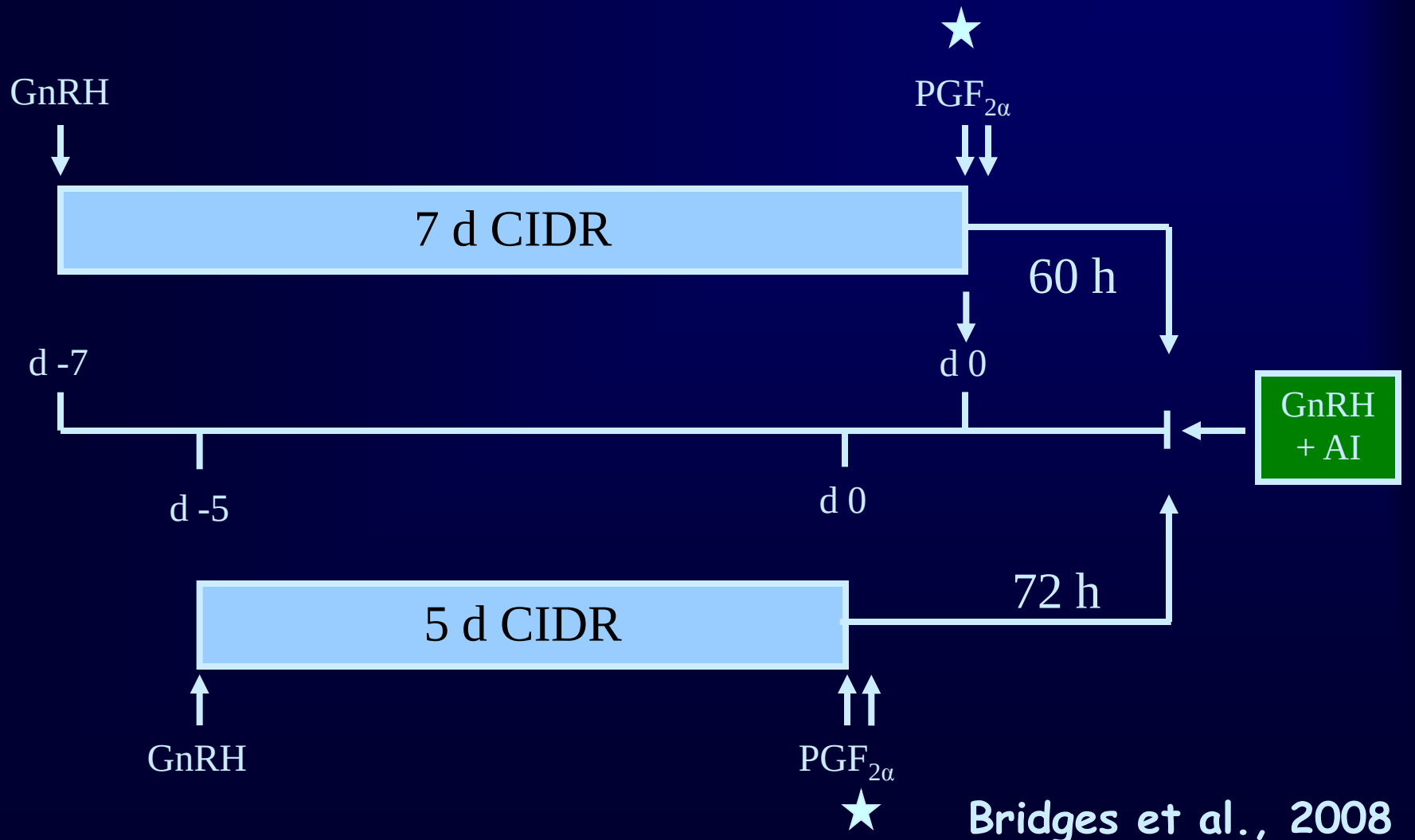
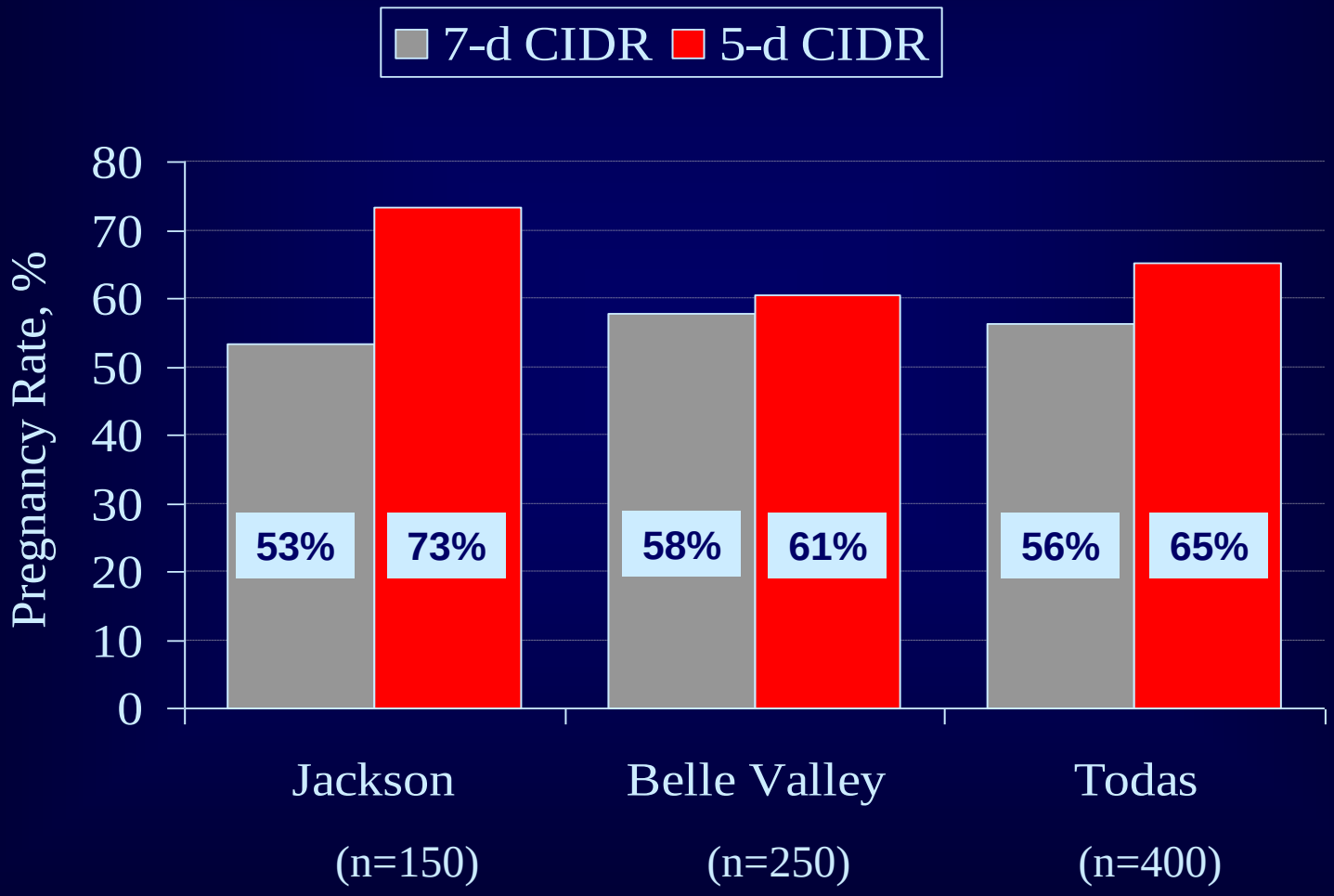
Diseño Experimental - 5 d vs 7 d Cosynch



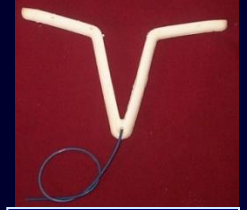
Bridges et al., 2008

Porcentajes de preñez



Trt, P<.03; TrtxLoc, P=.08

Bridges et al., 2008



DIV

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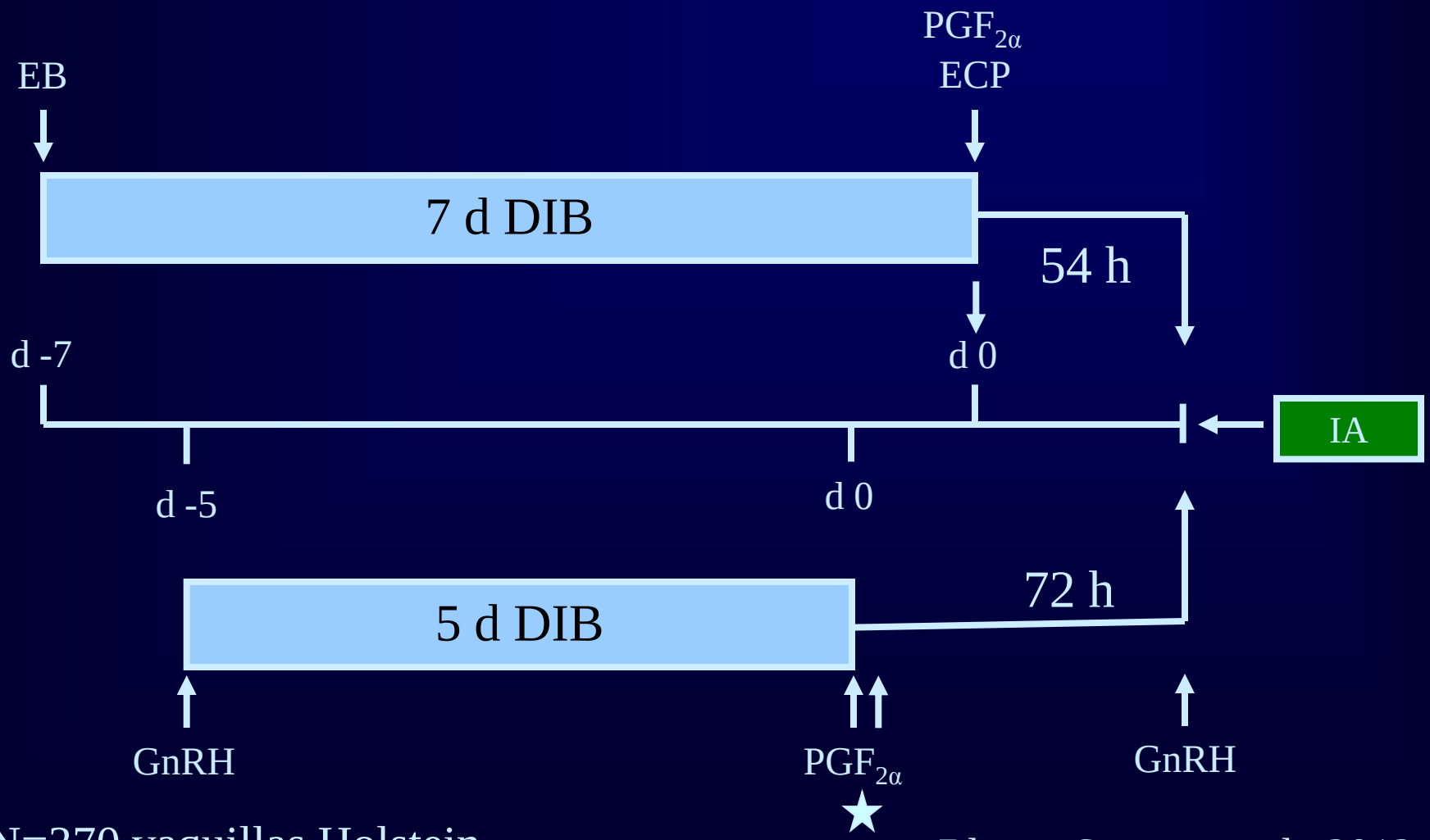
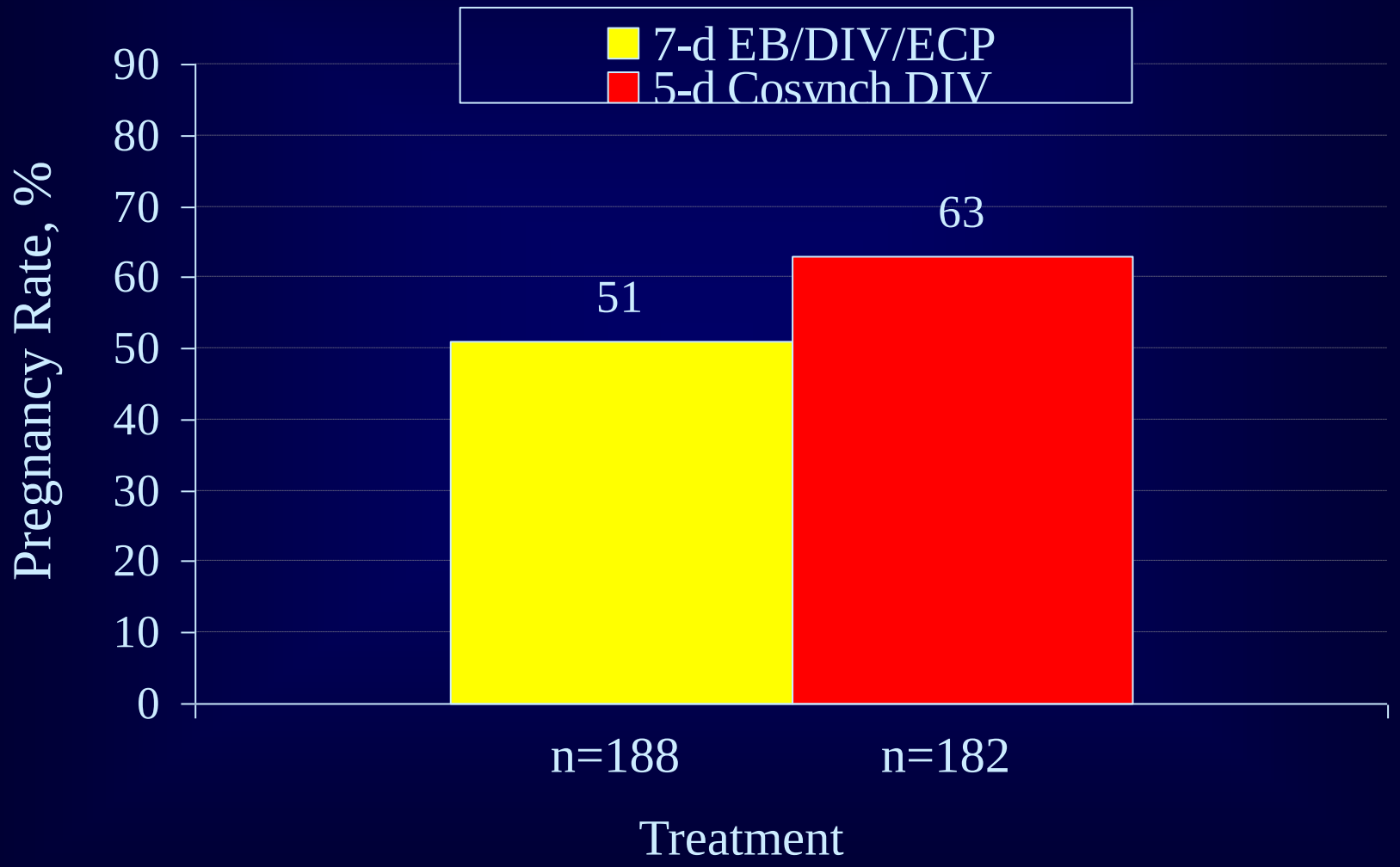
Diseño Experimental
- EB/DIV/ECP vs 5 d Cosynch DIV -



N=370 vaquillas Holstein

Blanco Serrano et al., 2012

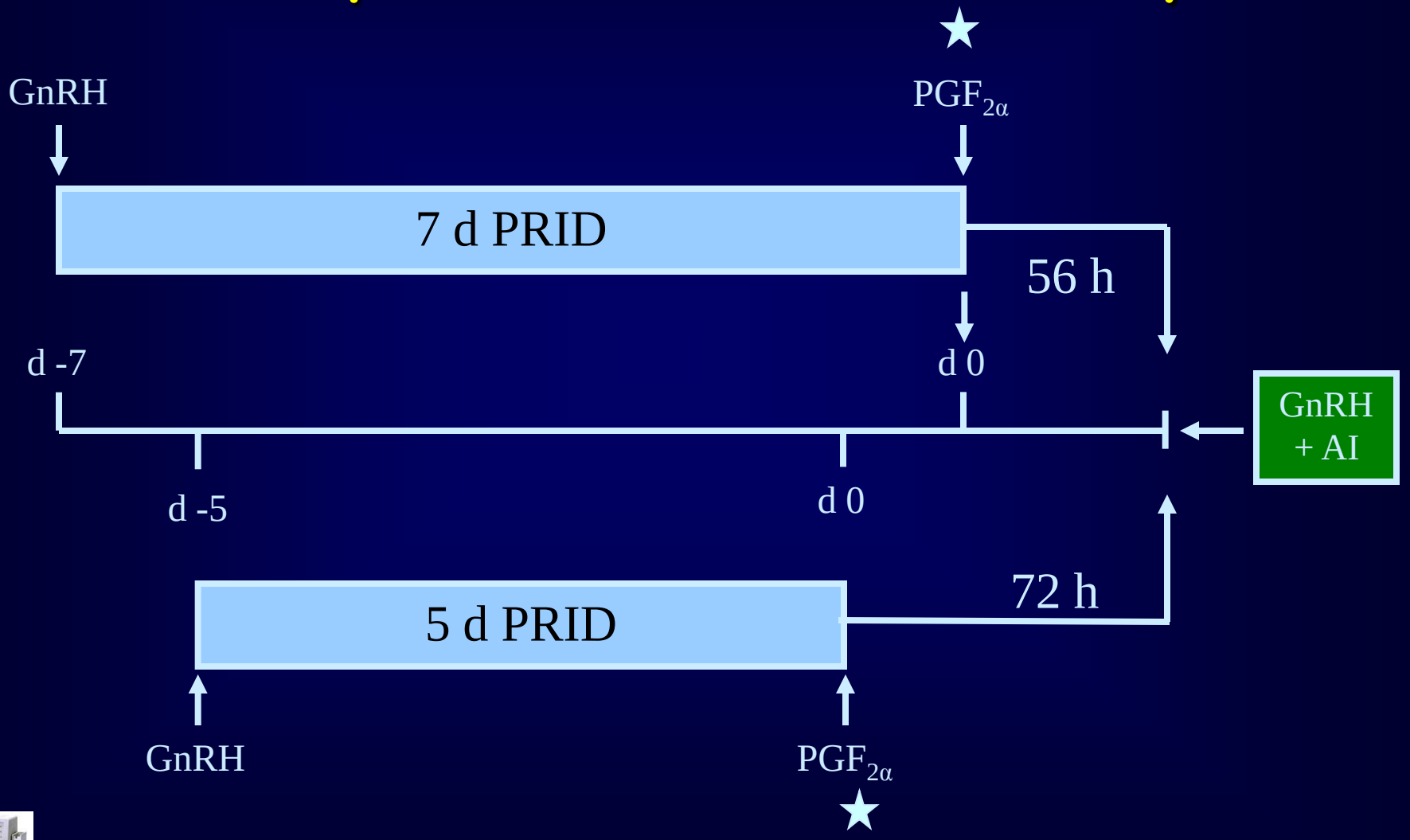
Porcentaje de preñez



N=50 sexed semen; Trt, P <0.05

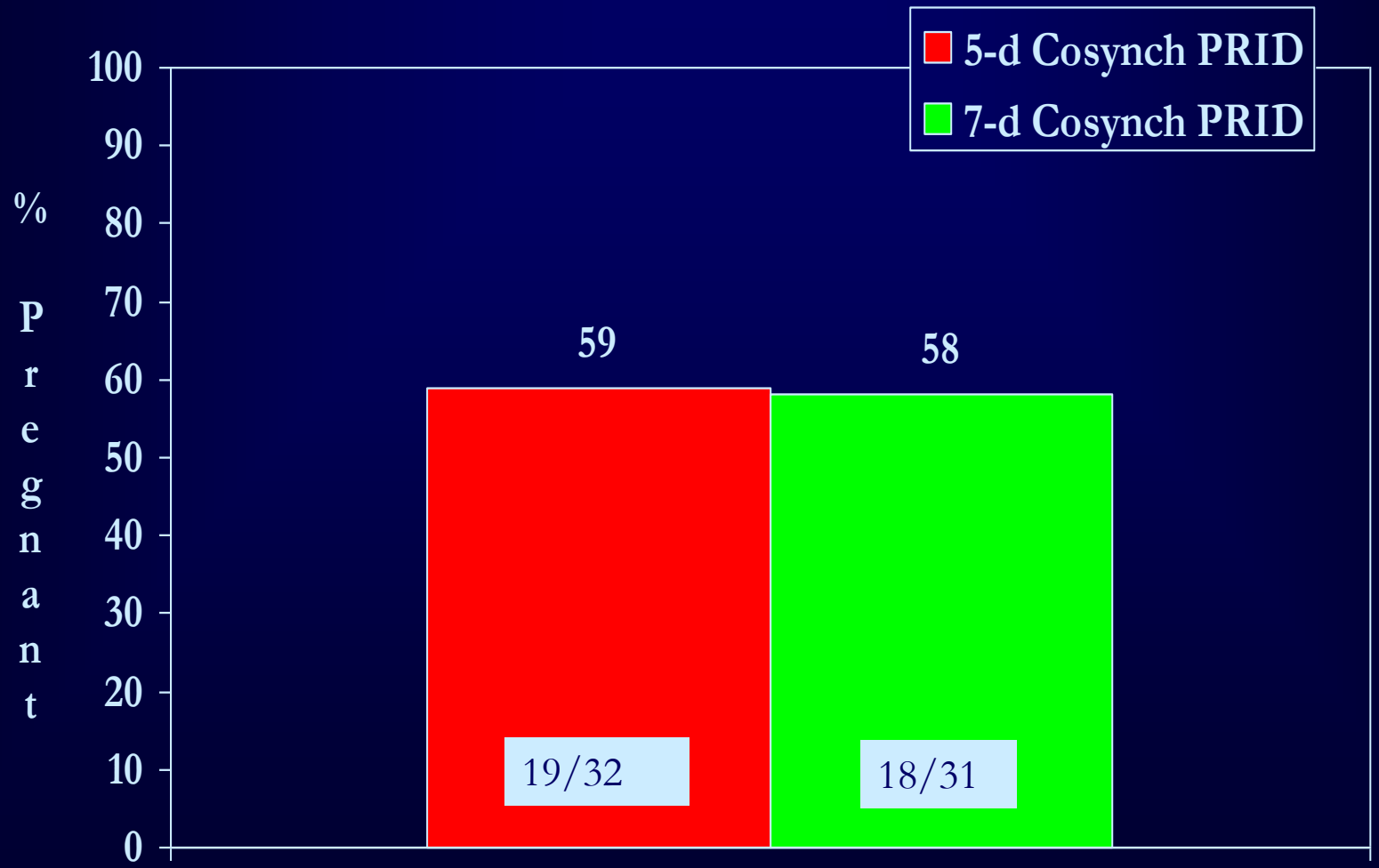
Blanco Serrano et al. , 2012

Diseño Experimental - 5 d vs 7 d Cosynch



Colazo y Ambrose, 2011

Porcentaje de preñez a los 28 d



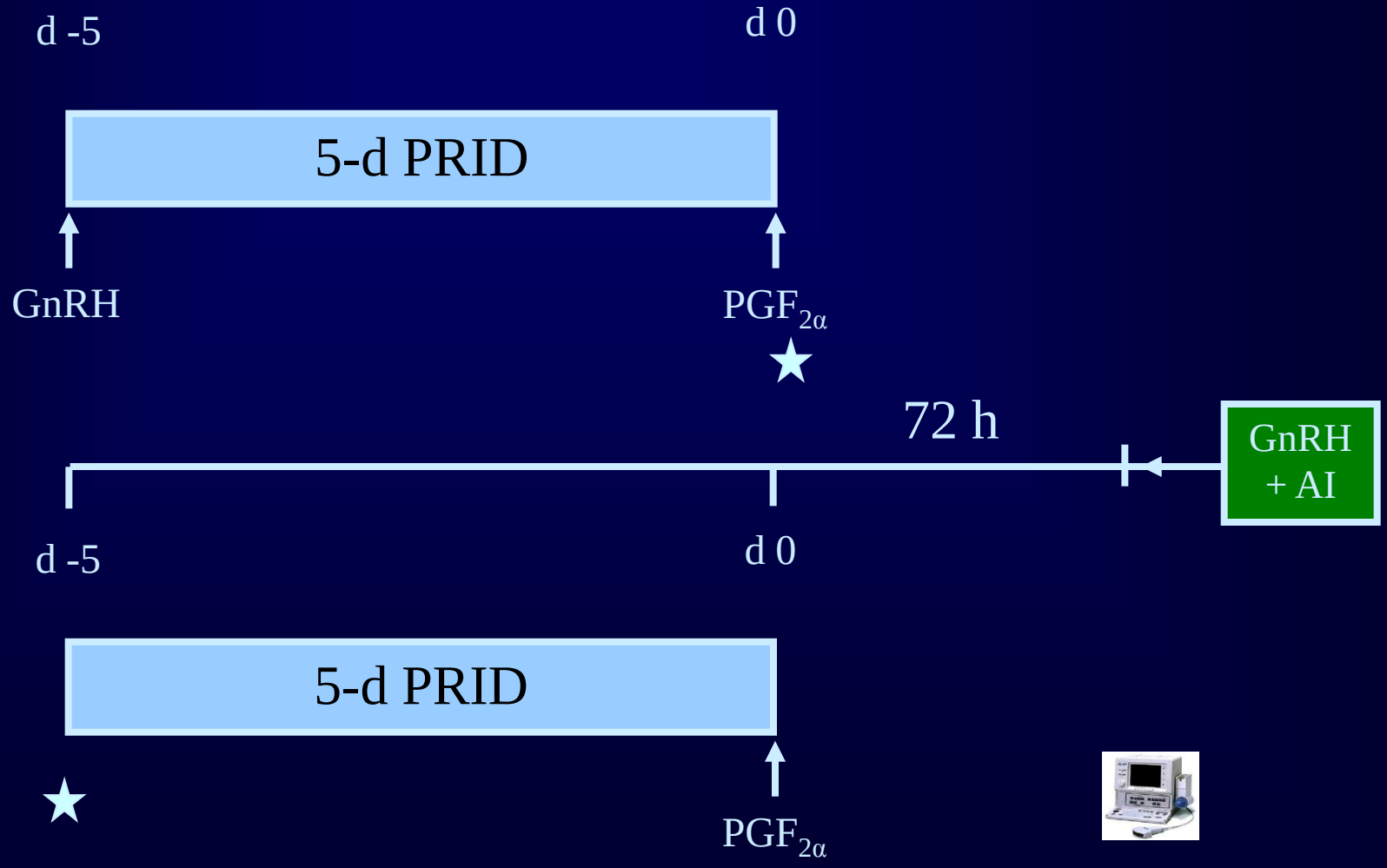
Trt, P >0.05

Colazo y Ambrose, 2011

	Cosynch/PRID		
	5-d		7-d
Ov. A la 1° GnRH	25%	*	39%
Ov. A la 2° GnRH	65%		84%
Ov. Antes IATF	22%	*	10%
No resp. PGF	6%		0%

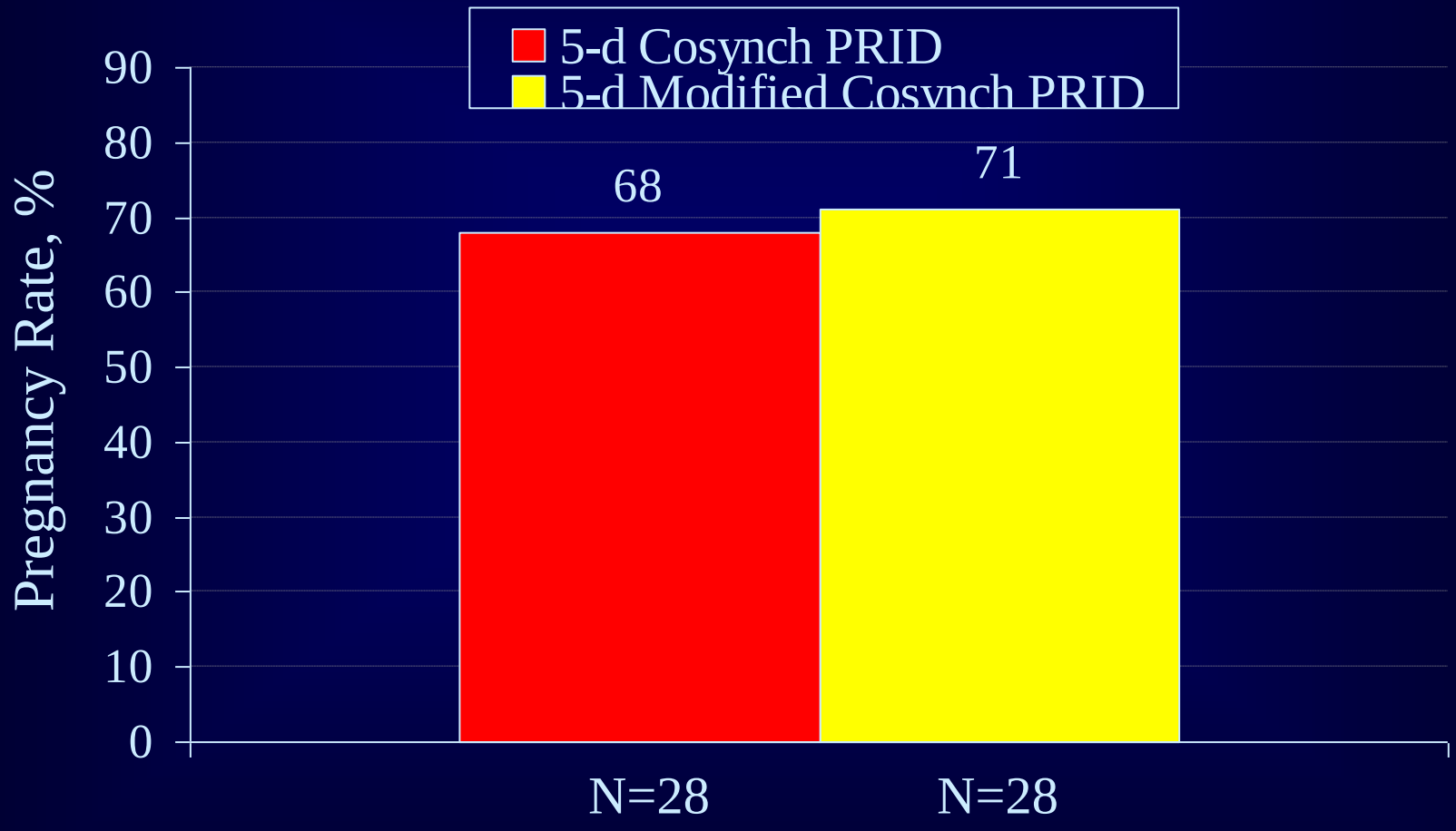
Colazo y Ambrose, 2011

Diseño Experimental – 5-d Cosynch Modificado



Colazo y Ambrose, 2011

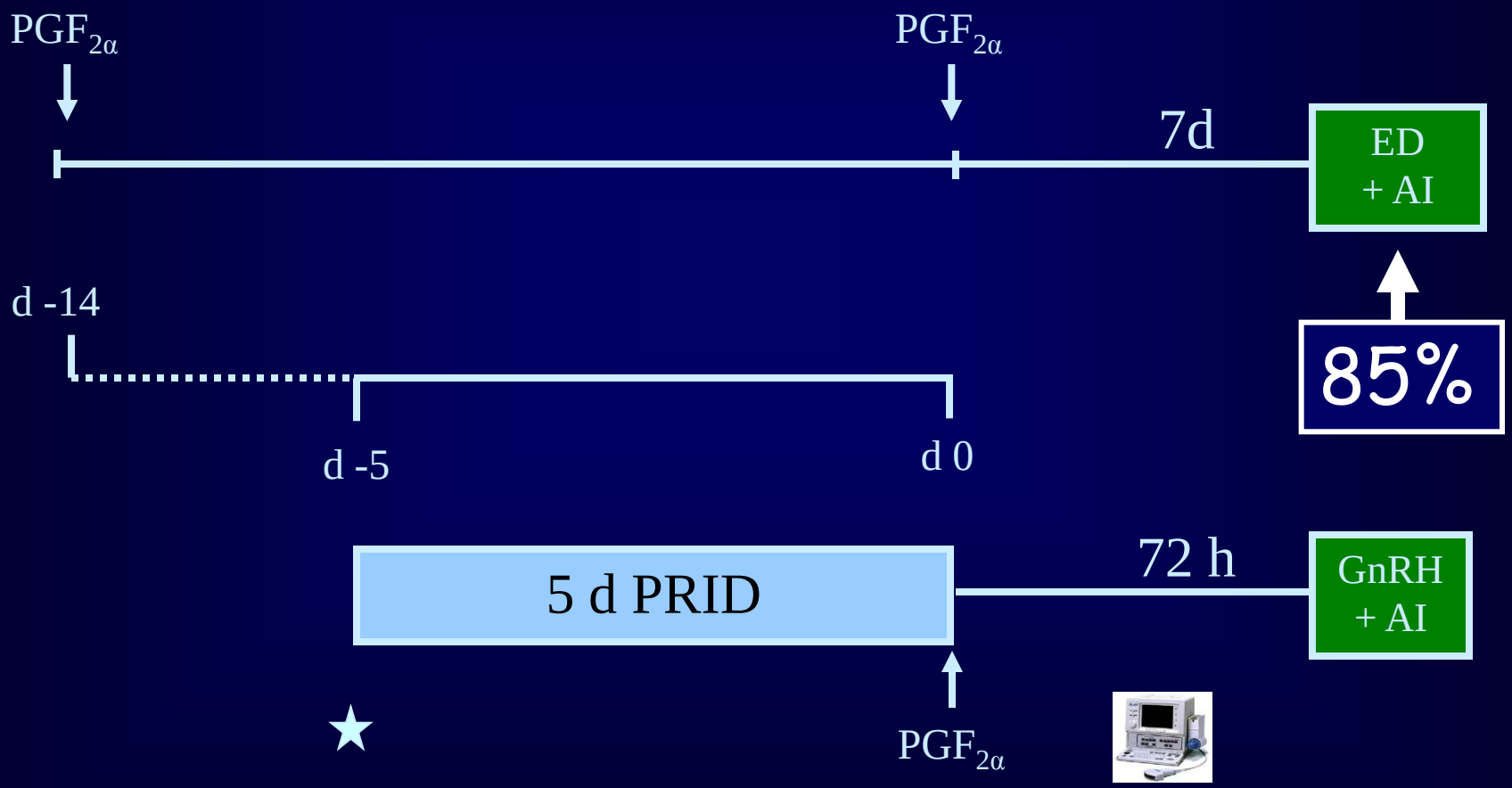
Porcentaje de preñez a los 28 d



Trt, P >0.05

Colazo y Ambrose, 2011

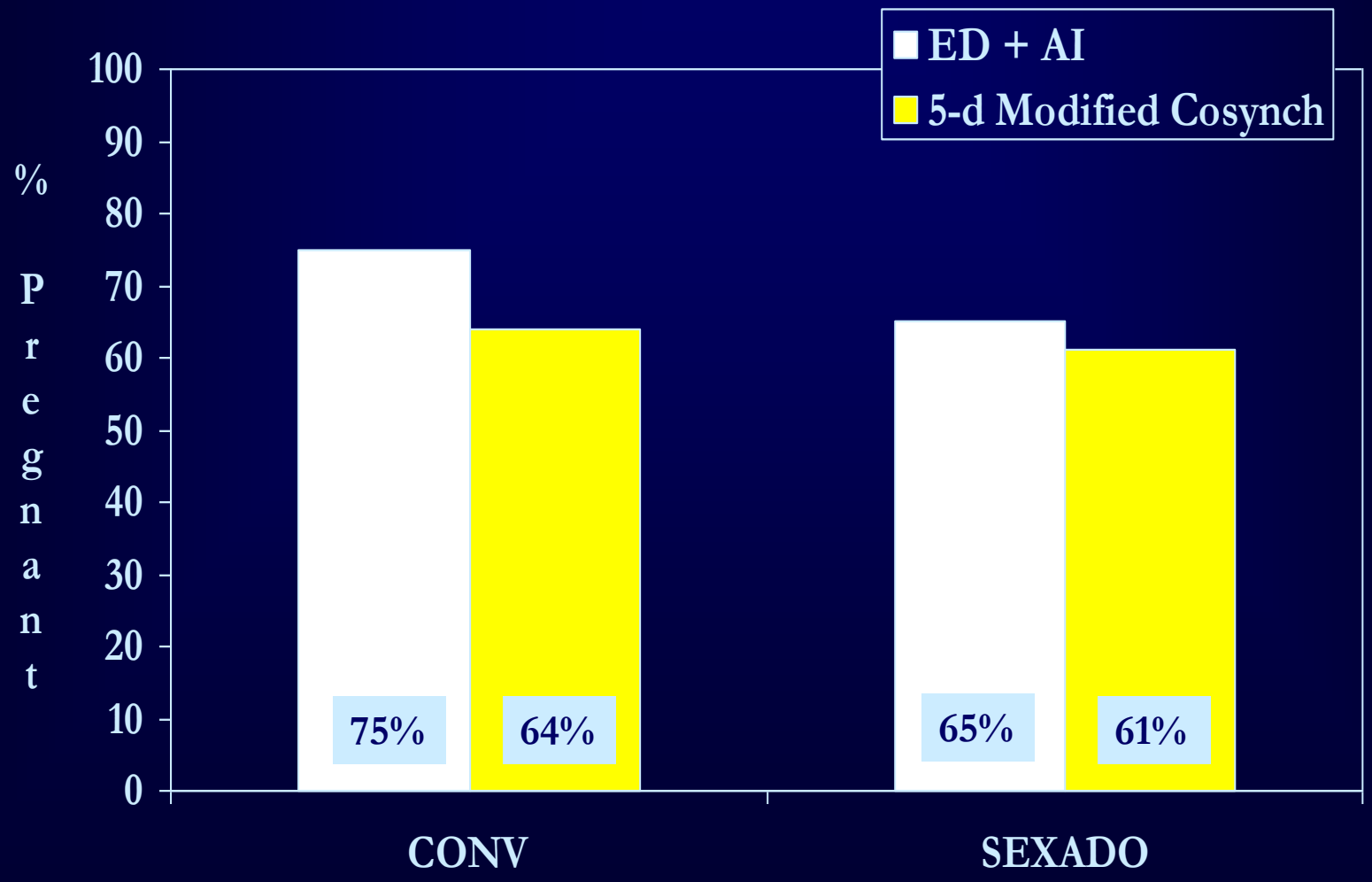
Diseño Experimental – Celo detectado vs. 5-d Cosynch Modificado



N=224; ~Mitad IA con semen sexado

Colazo, no publicado

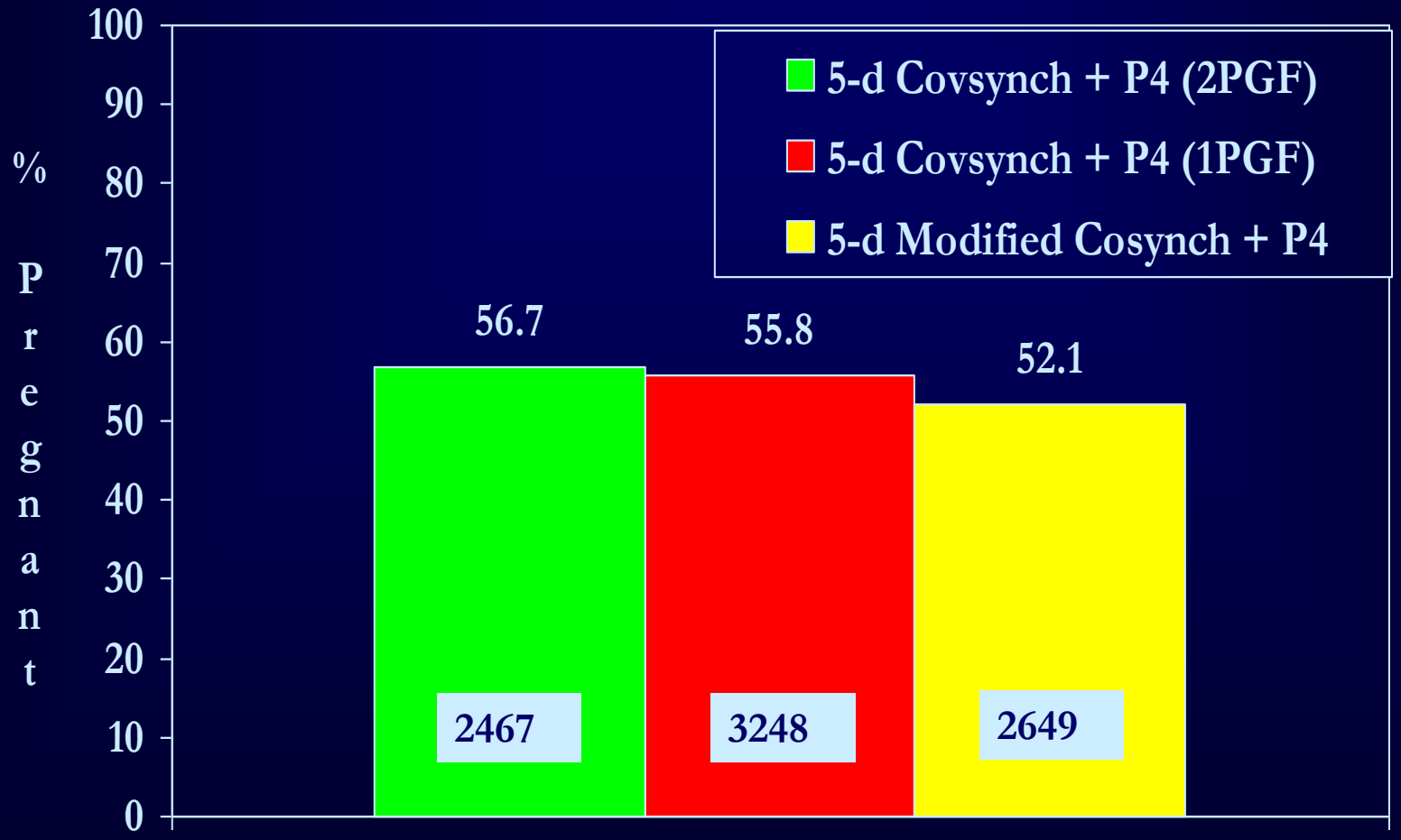
Concepcion 25-30 d



N=224

Colazo, no publicado

Estudios en novillas
Porcentaje de preñez ~28 d



Publicaciones entre el 2010 to 2014

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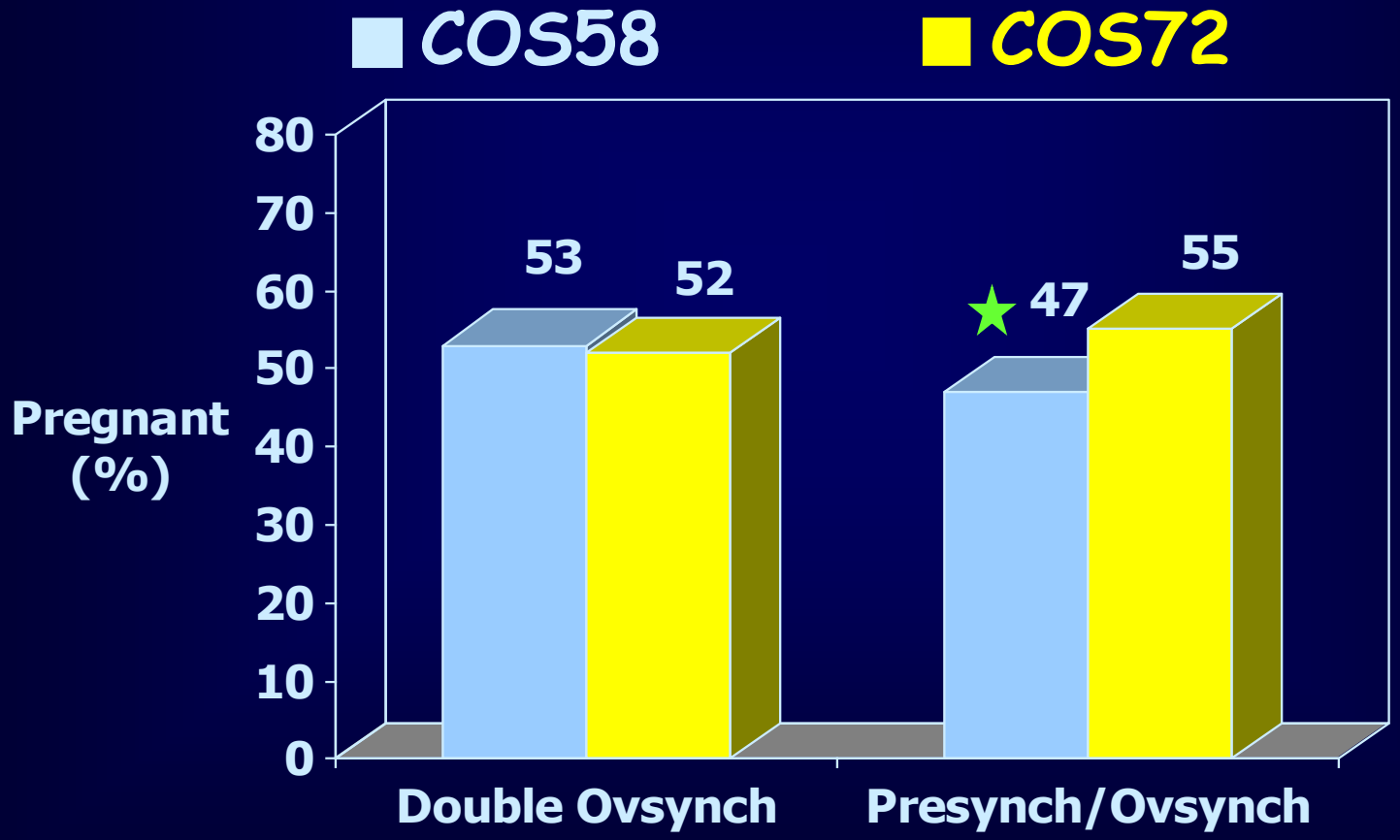
Doble Ovsynch vs. Presynch/Ovsynch

n = 1754; 14% acyclic

Ribeiro et al., 2012

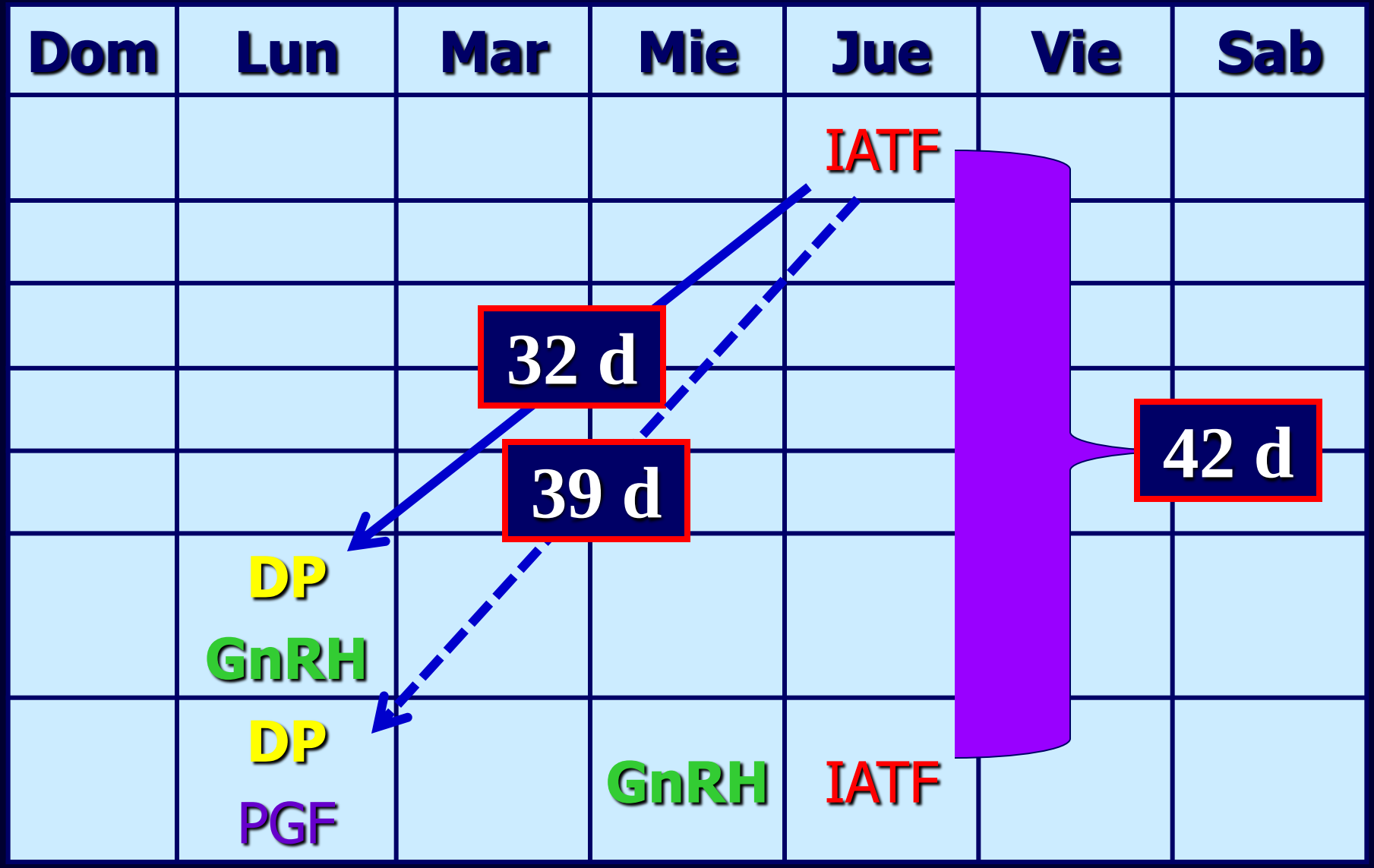
Doble Ovsynch vs. Presynch/Ovsynch-PR 65 d



N =1754

Ribeiro et al., 2012

Sincronizacion y Resincronizacion



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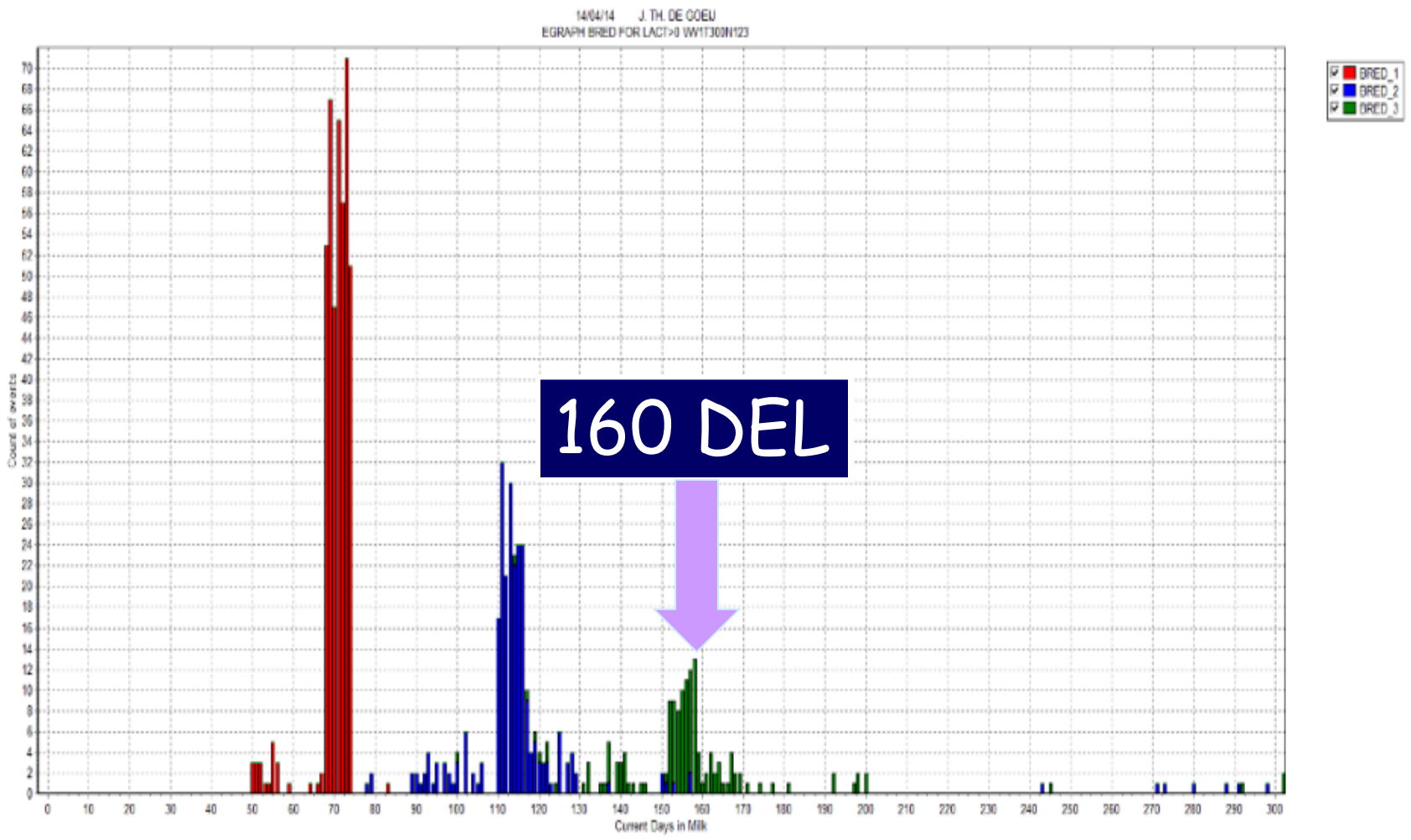
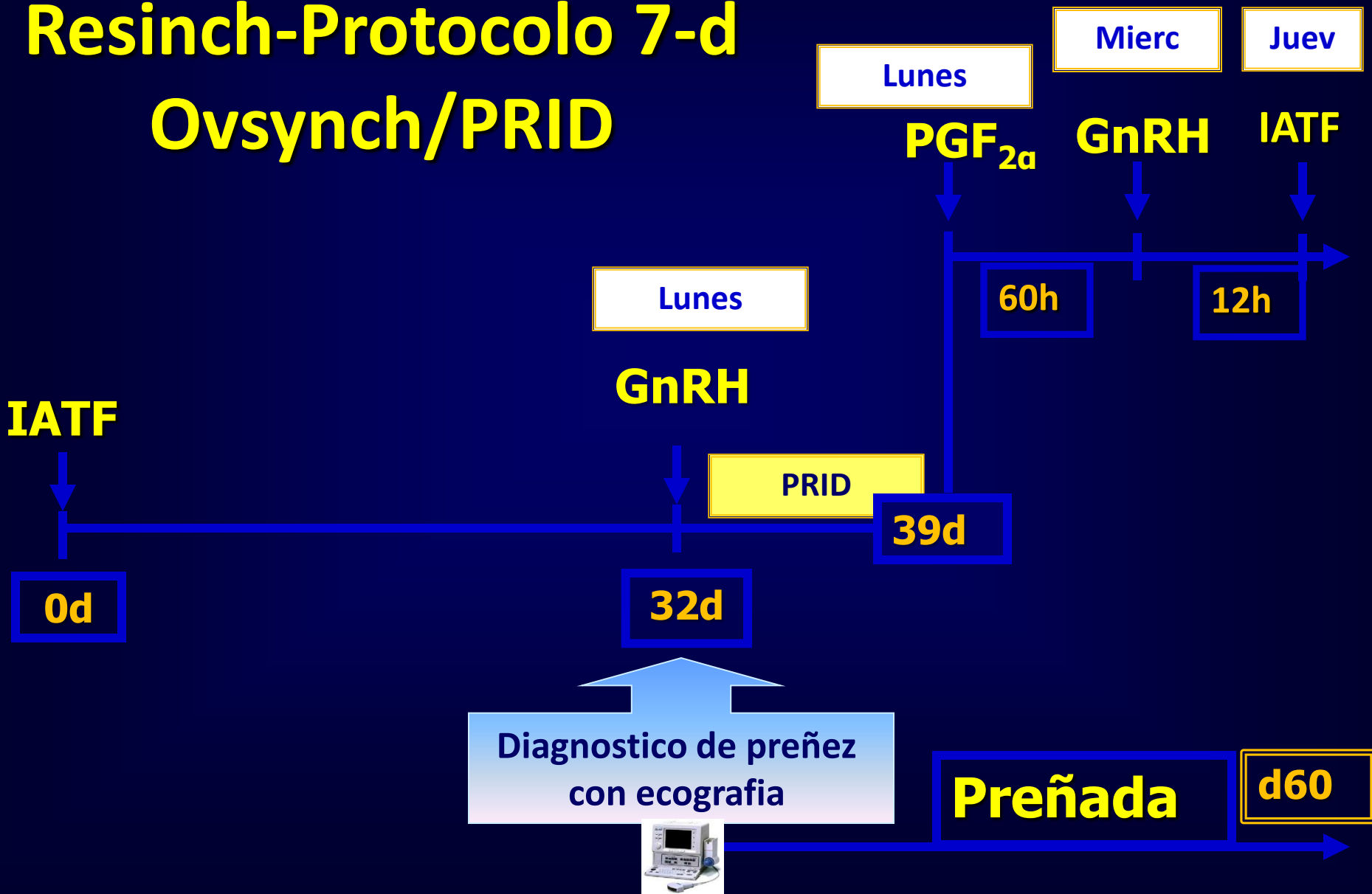
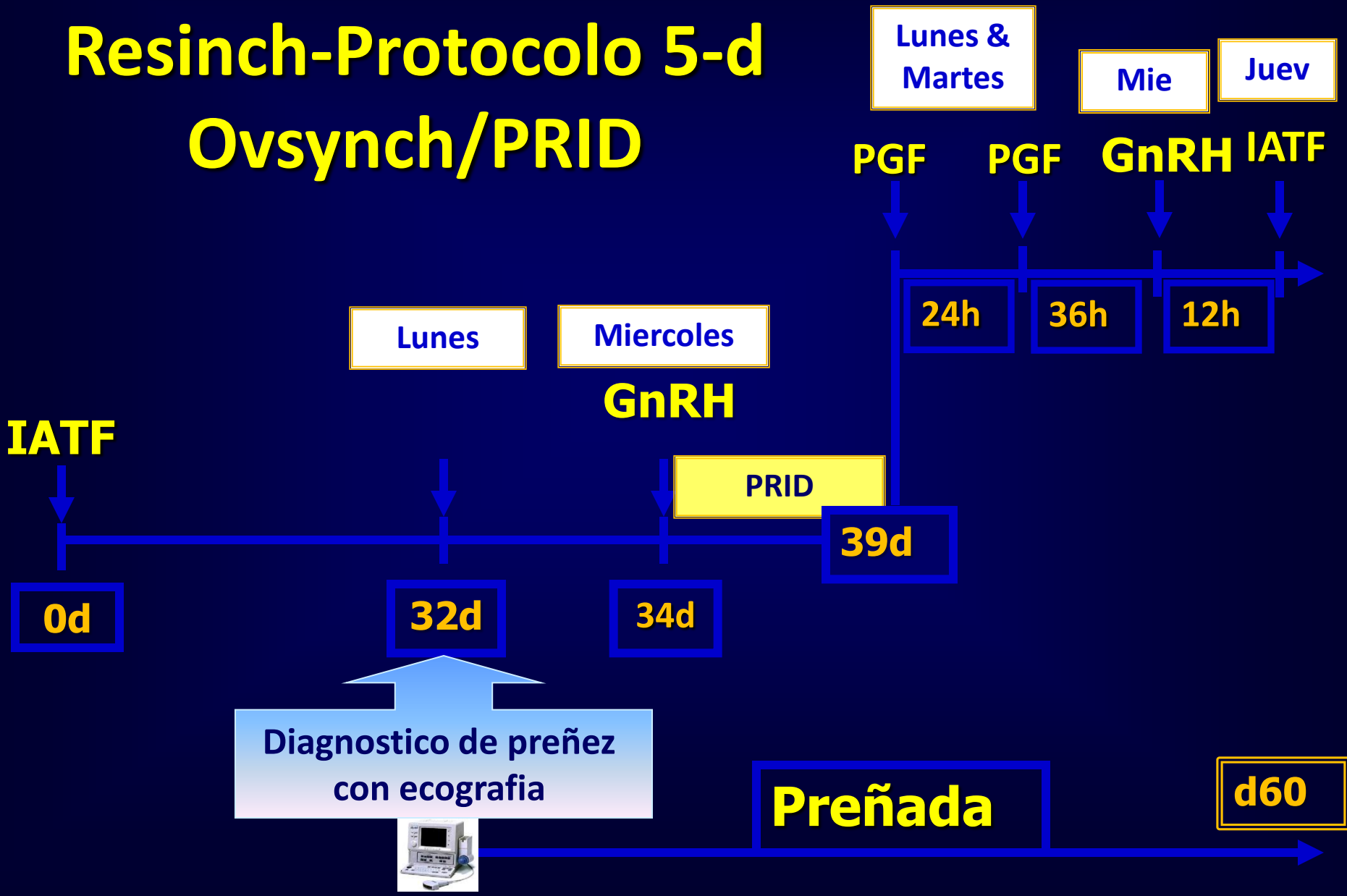
RESINCRONIZACION



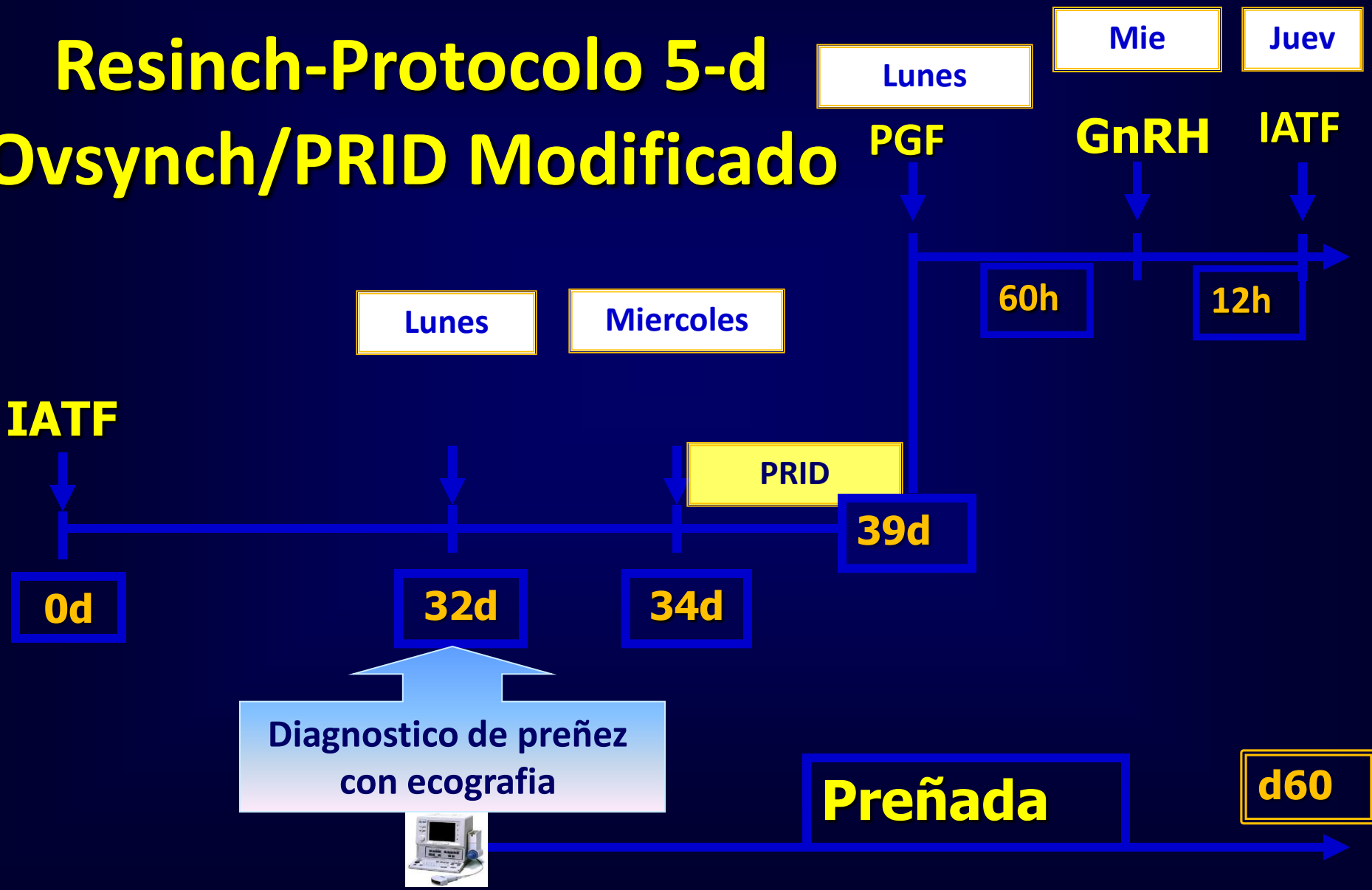
Resinch-Protocolo 7-d Ovsynch/PRID



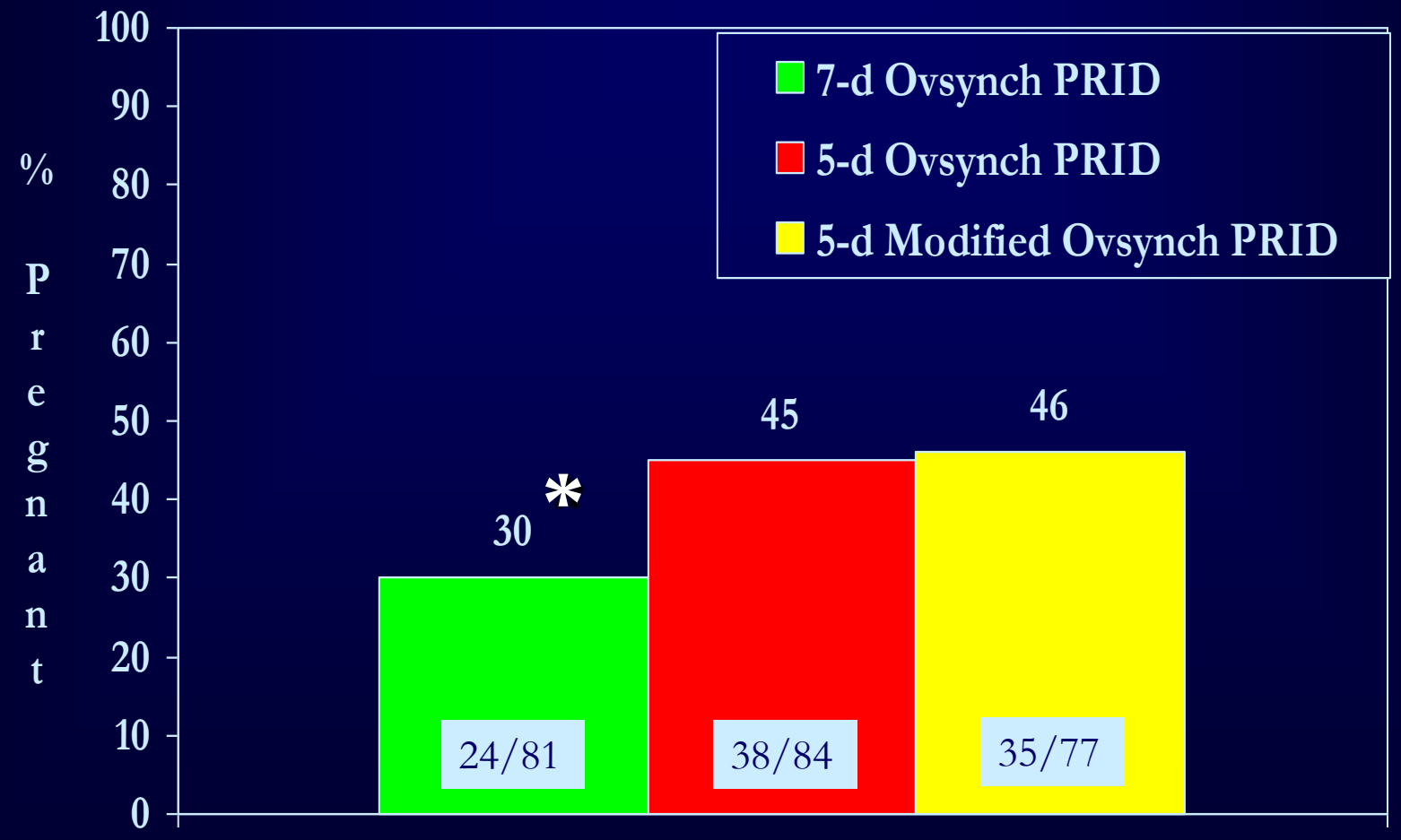
Resinch-Protocolo 5-d Ovsynch/PRID



Resinch-Protocolo 5-d Ovsynch/PRID Modificado



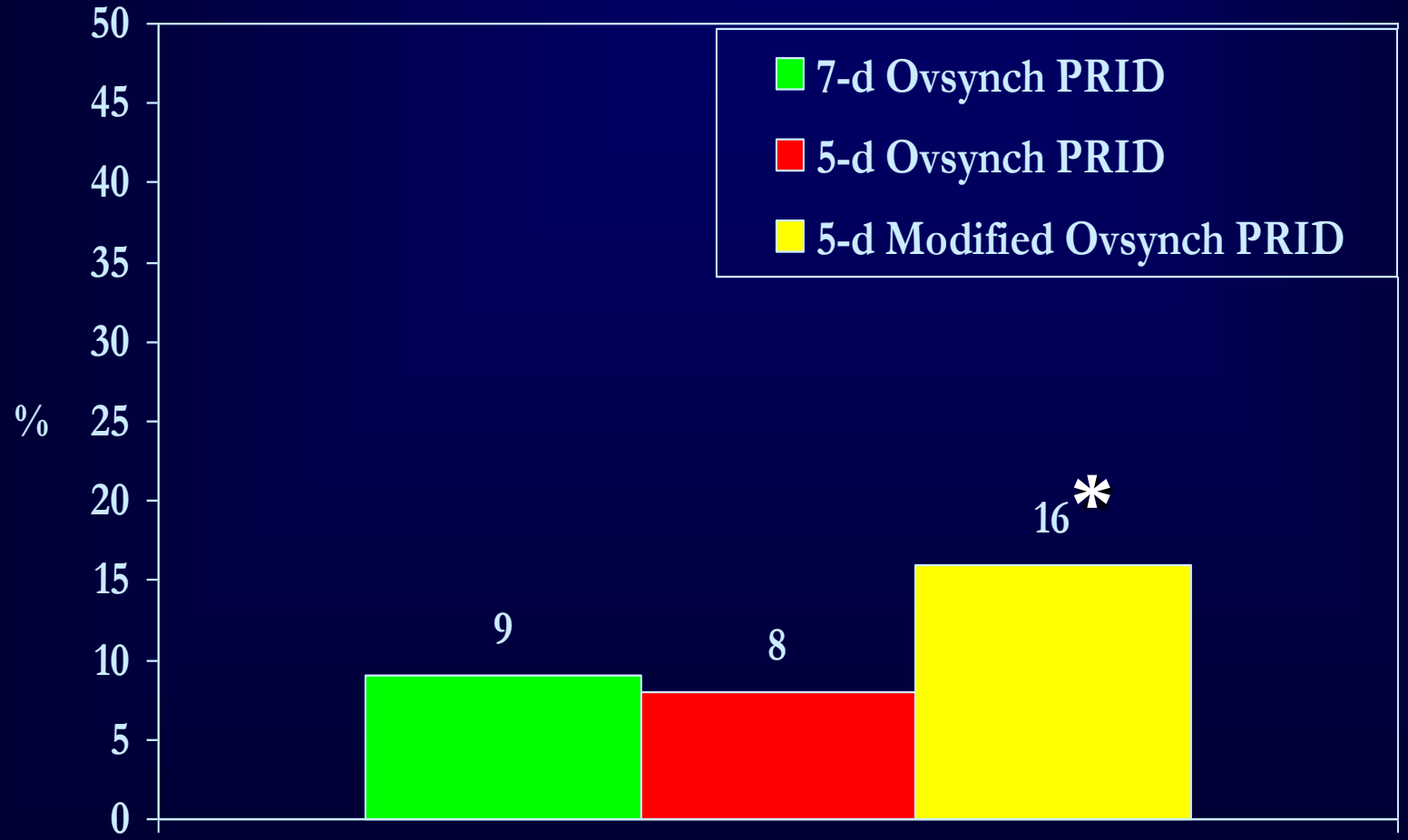
Porcentaje de preñez - 32 d



Trt, P <0.05

Colazo no publicado

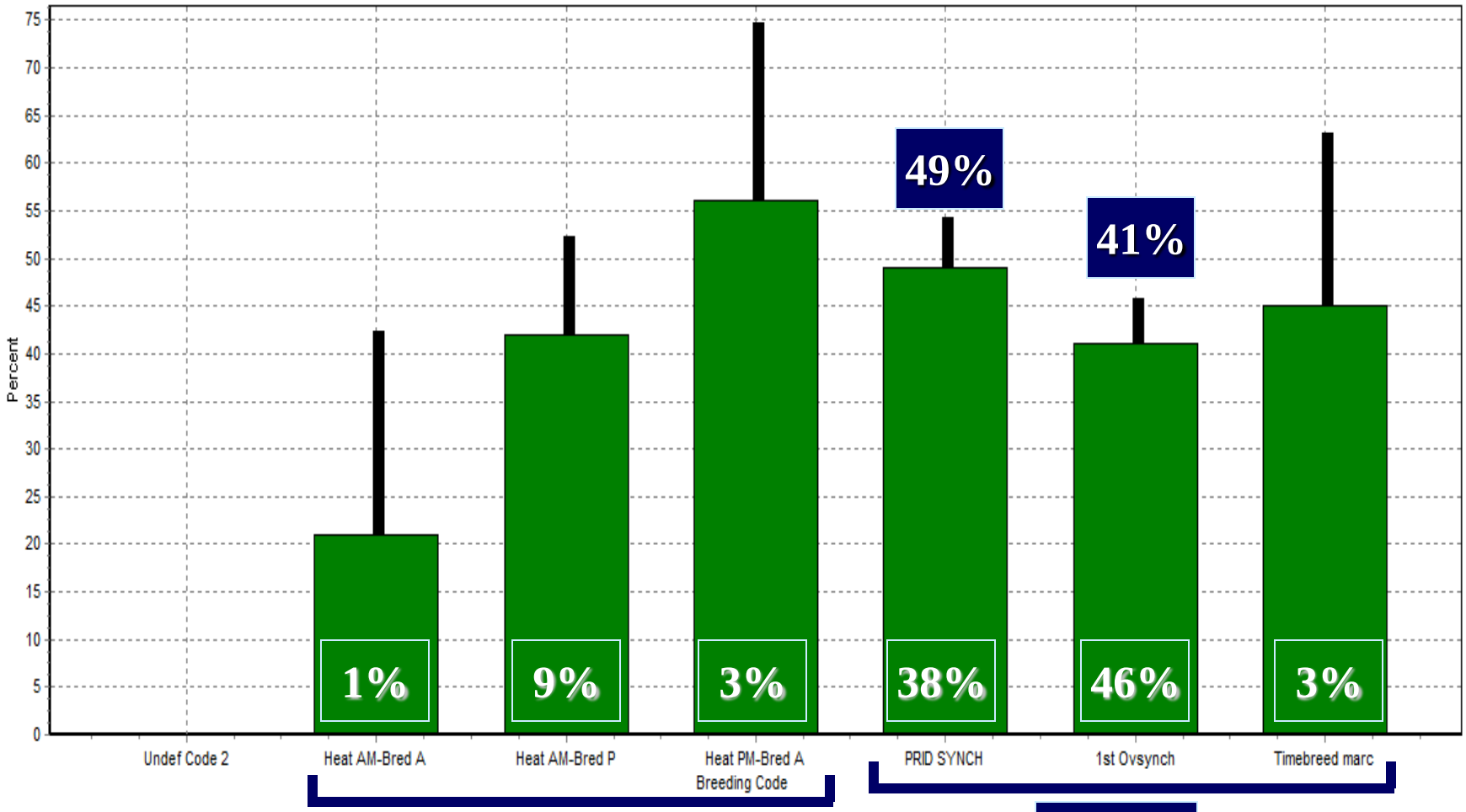
Perdidas de preñez - 32 y 60 d



Trt, P <0.1

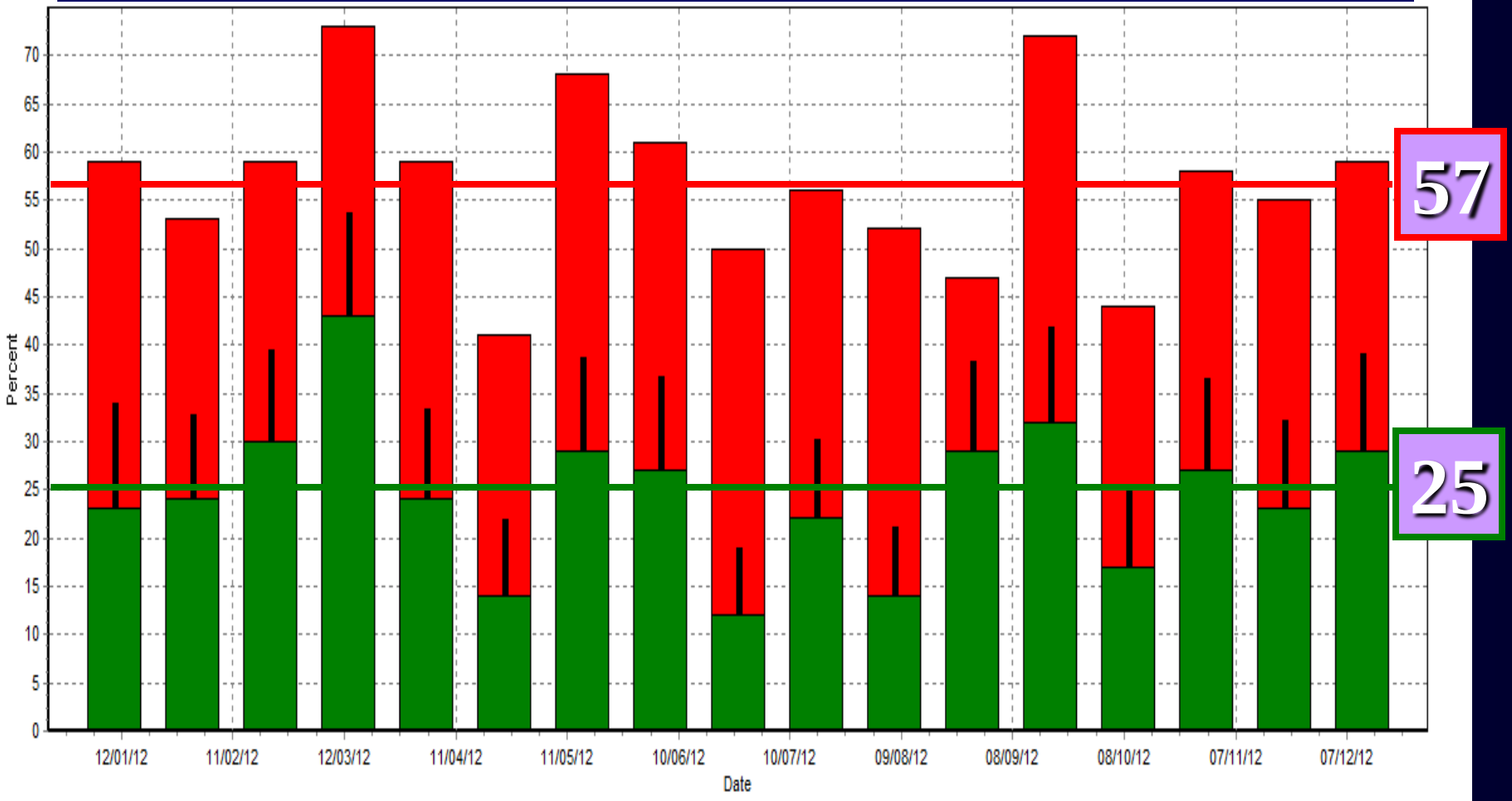
Colazo no publicado

Concepcion (957 IA - 2012)



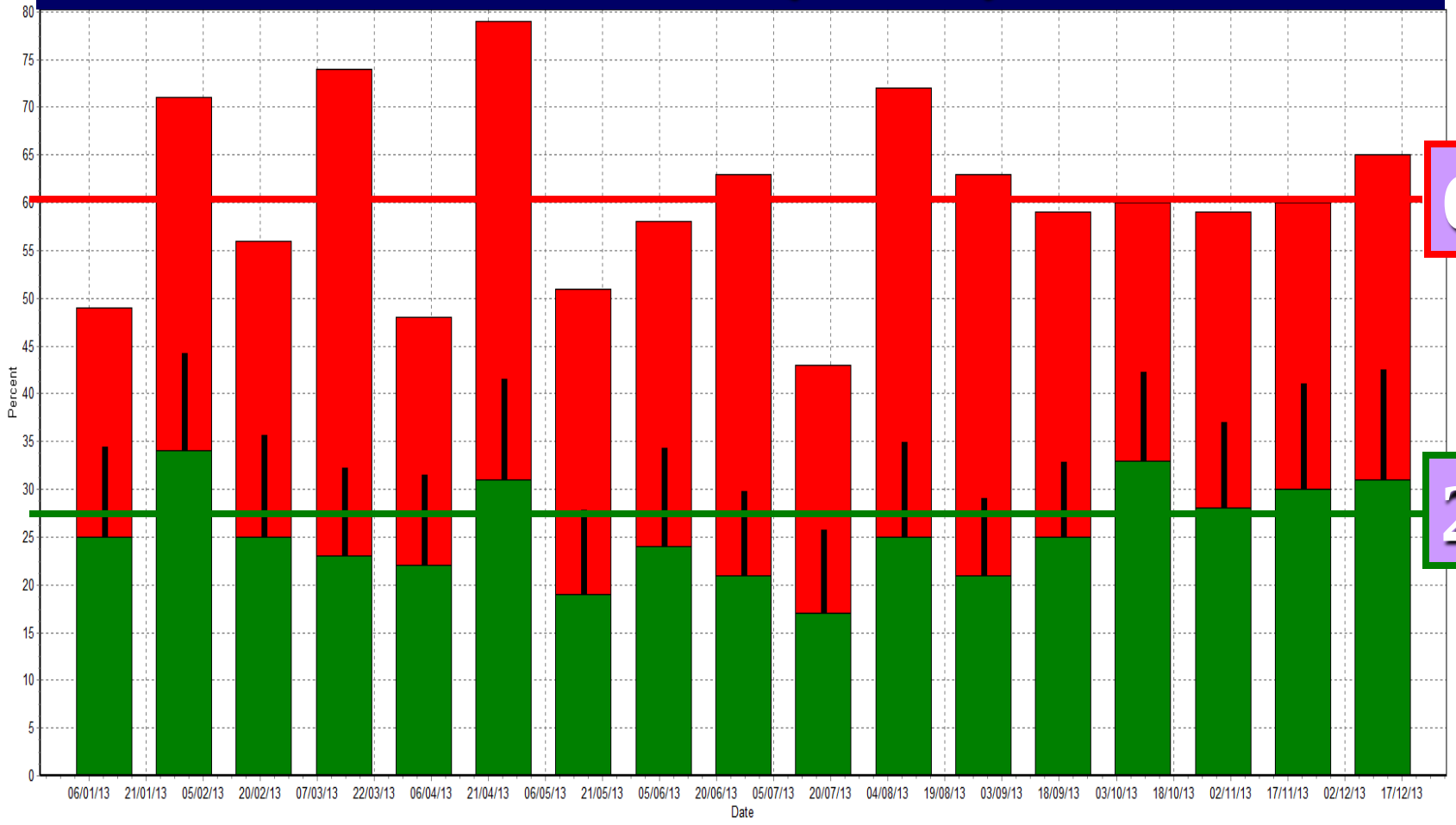
Wetaskiwin, AB
480 Vacas
11590 kg

Riesgo de inseminacion y preñez cada 21 dias (2012)

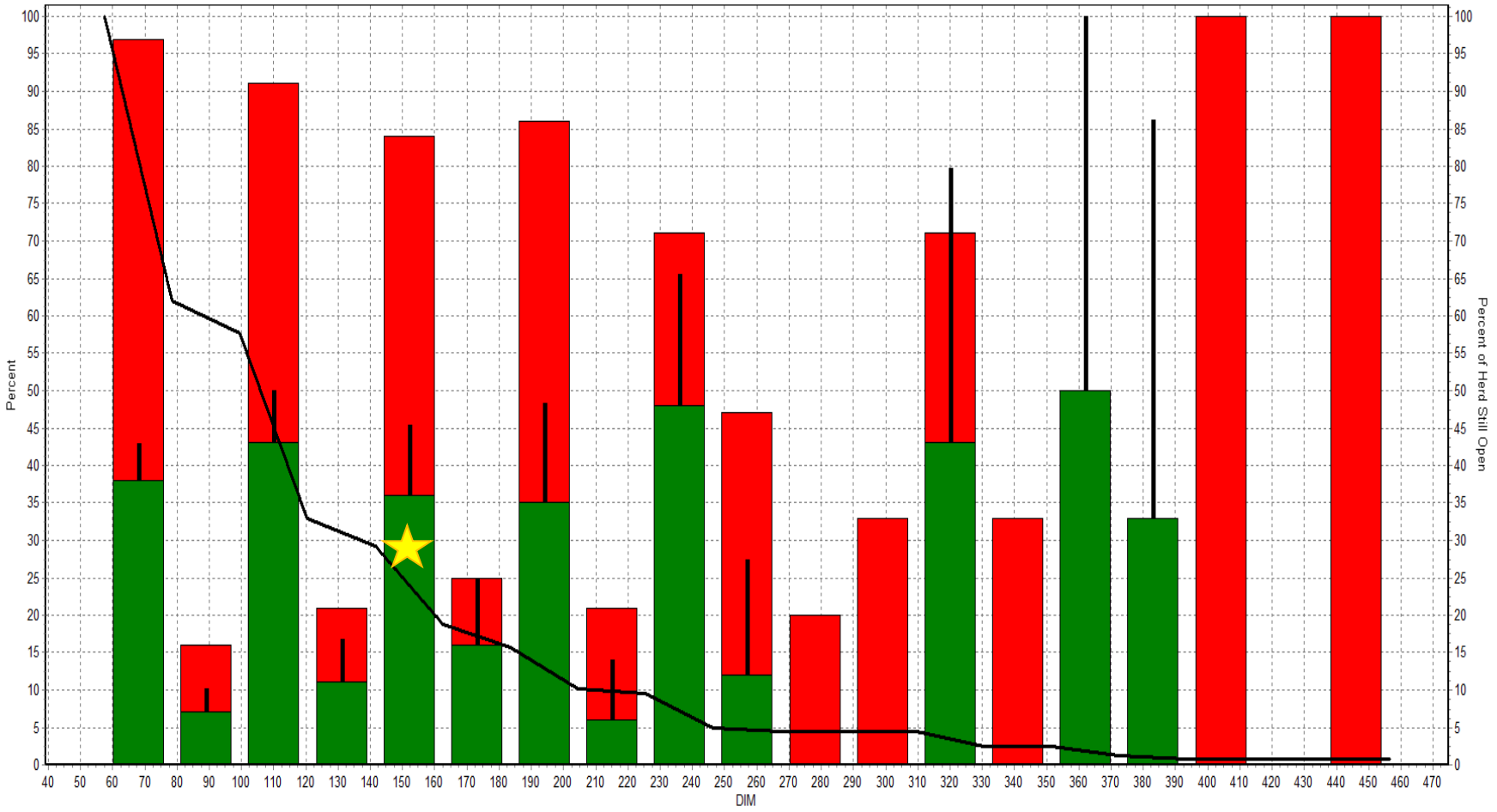


Alberta Agriculture and Rural Development

Riesgo de inseminacion y preñez cada 21 dias (2013)



Porcentaje de vacas preñadas y DEL (2013-14)



RESUMEN

- La sincronizacion de celos es una herramienta de manejo que ayuda a solucionar problemas asociados con la deteccion de celos
- Tratamientos que sincronizan el estro y la ovulacion mejoran la eficiencia de los programas reproductivos
  - Eliminan la necesidad de deteccion de celos
  - Mejoran los % de preñez porque aumentan el # de animales inseminados
- Tanto estradiol como GnRH son eficaces en programas de IATF, especialmente si son usados con progestagenos.

RESUMEN (Cont'd)

- Presincronizacion mejora los % de preñez de protocolos a base de GnRH
  - Aumenta el numero de animales que responden a la primera GnRH
- El protocolo de 5-d mejora % de preñez en vacas resincronizadas y la GnRH inicial no seria necesaria para obtener aceptables % de preñez en vaquillas

Muchas Gracias !

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