

## Estrus pre-synchronisation (pre-Synch) using high long-acting progesterone doses in Fixed-Time Artificial Insemination (FTAI) protocols: effects on pregnancy rate in *Bos indicus* cows

Miguel A. Gutierrez-Reinoso<sup>1\*</sup>, Jaime O. Armijos-Román<sup>2</sup>, Luis F. Cartuche-Macas<sup>3</sup>, Manuel B. Quezada-Padilla<sup>2</sup> and Manuel García-Herreros<sup>4,5</sup>

1 Universidad Técnica de Cotopaxi (UTC), 050150 Latacunga, Ecuador. 2 Facultad Agropecuaria y de Recursos Naturales Renovables. Universidad Nacional de Loja (UNL), 110101 Loja, Ecuador. 3 Instituto de Investigación de la Biodiversidad "Pachamamata Kamak". Universidad Intercultural de las Nacionalidades y Pueblos Indígenas (UINPIAW), 170524 Quito, Ecuador. 4 Instituto Nacional de Investigação Agraria e Veterinária (INIAV), 2005-424 Santarem, Portugal. 5 CIISA-AL4AnimalS, Faculty of Veterinary Medicine, University of Lisbon, 1300-477 Lisbon, Portugal



### INTRODUCTION & AIM

Fixed-Time Artificial Insemination (FTAI) protocols are crucial for improving *Bos indicus* cattle.

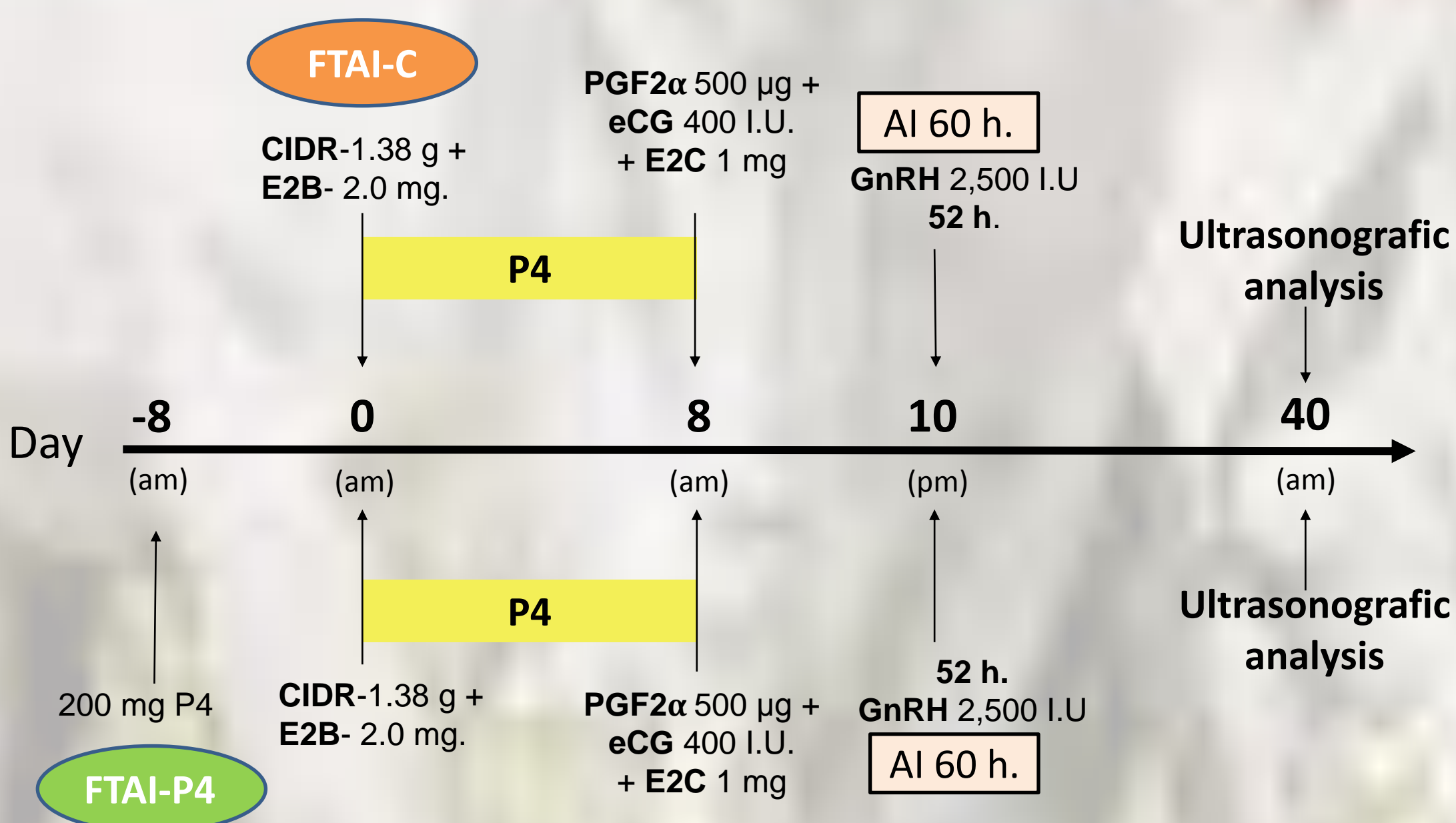
The aim of this study was to assess the effect of high long-acting progesterone (pre-synch) doses in FTAI protocols and its impact on pregnancy rate (PR) in *Bos indicus* cattle.

### MATERIAL & METHODS

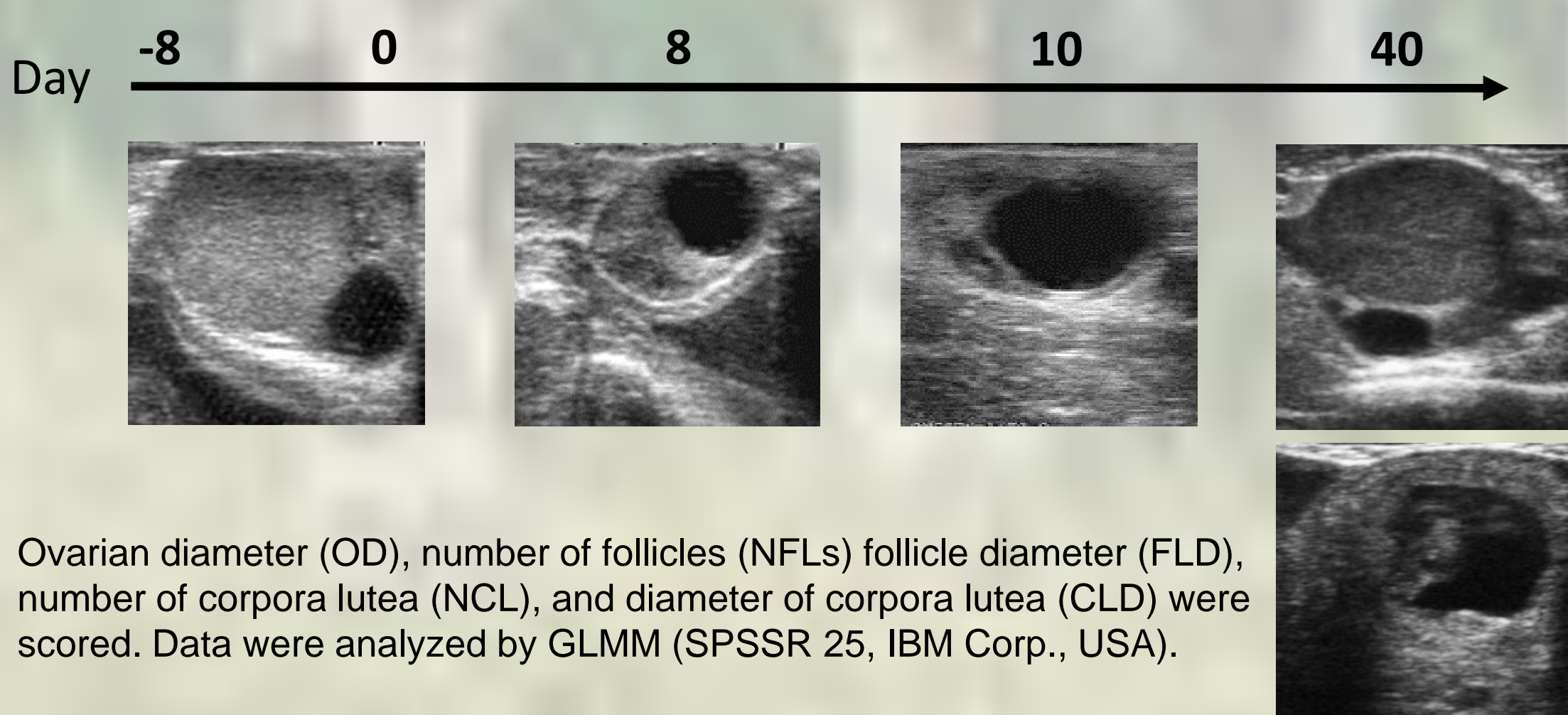


Brahman cows (n=100) were randomly divided into two groups, FTAI-C (C; conventional-protocol; n= 50) and FTAI-P4 (PP4; experimental-Pre-Synch-protocol, using high long-acting progesterone (P4) dose; n=50).

#### Experimental groups



**Ultrasonographic Assessment /** Ovarian diameter, number and diameter of follicles, number and diameter of corpora lutea, **gestation**



Ovarian diameter (OD), number of follicles (NFLs) follicle diameter (FLD), number of corpora lutea (NCL), and diameter of corpora lutea (CLD) were scored. Data were analyzed by GLMM (SPSSR 25, IBM Corp., USA).

### RESULTS

No differences were observed between C and PP4 regarding OD, FLD, NFL, CLD, and NCL on Day -8 ( $p > 0.05$ ); however, differences were observed in OD, NFL, and CLD on Day 0 ( $p < 0.05$ ).

Figure 1.

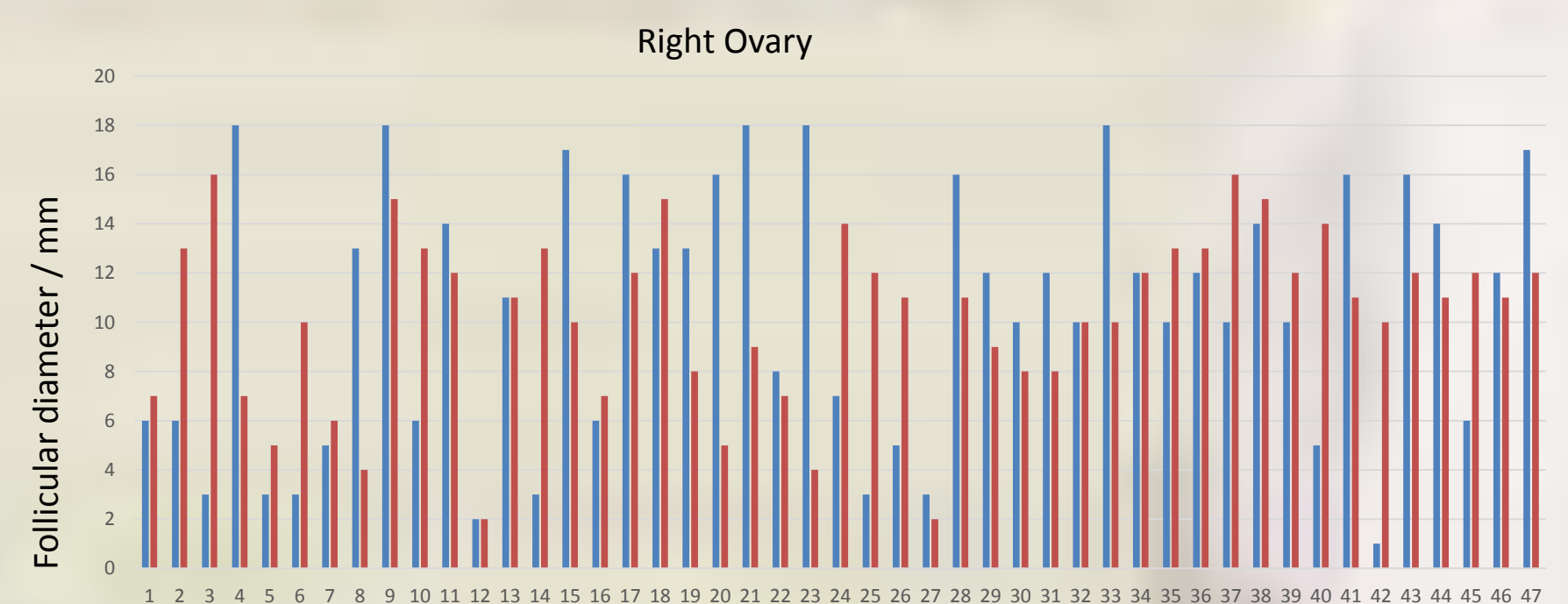
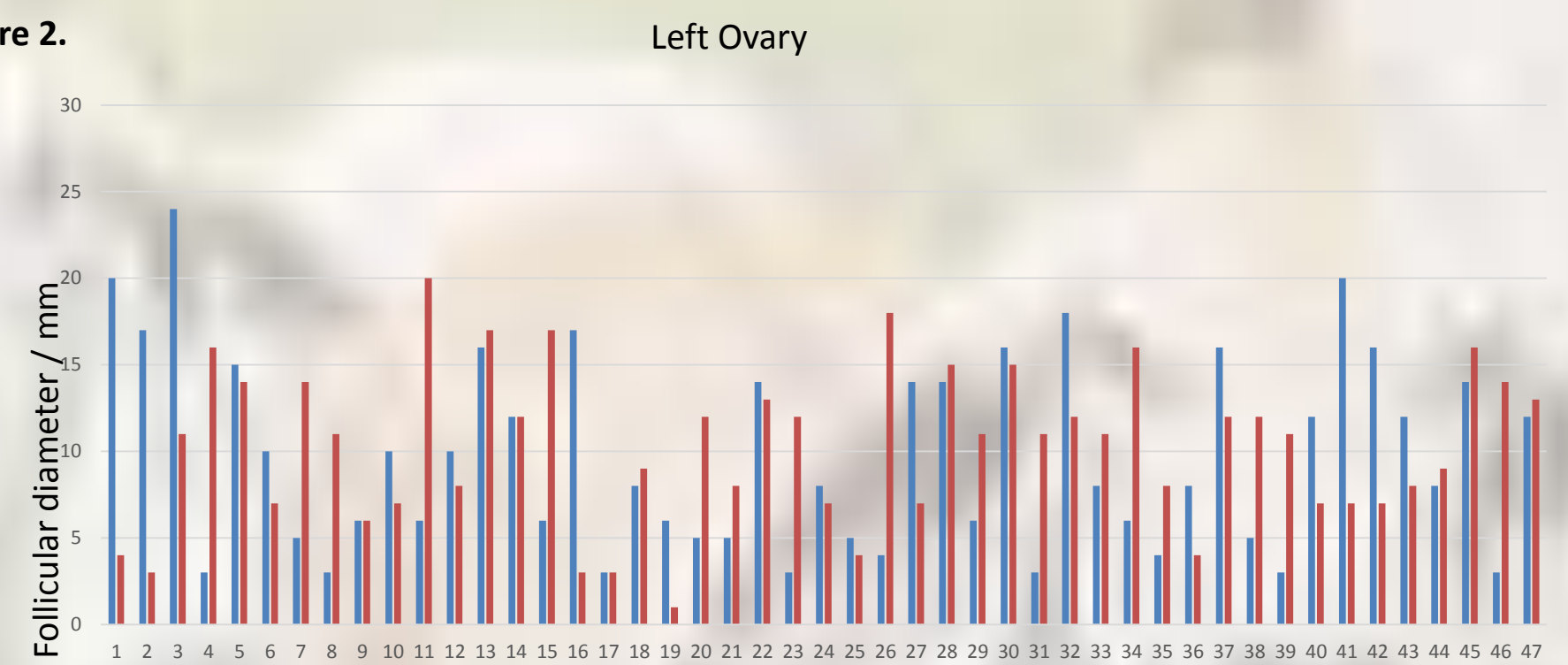


Figure 2.



Differences were observed in OD, NFL, FLD, and CLD between protocols on Day 8 and in OD and CLD on Day 10 ( $p < 0.05$ ).

Table 1. Pregnancy rate

DAY 40	CONTROL (FTAI-C)	TREATMENT (FTAI-P4)	P-value
Pregnancy rate (%)	23/50 (46)	31/50 (62)	$p=0.06$

Finally, no differences between C (23/50; PR= 46%) and PP4 (31/50; PR= 62%) were observed ( $p= 0.06$ ).

### CONCLUSION

In conclusion, ovarian structures were similar in both protocols. Although PR slightly improved when using the PP4-pre-Synch protocol, differences between protocols were not significant in *Bos indicus* cattle.