

Impact of Bromocriptine Withdrawal Timing on Pregnancy Outcomes in Patients with Pituitary Prolactin-Secreting Microadenomas: A Real-World Retrospective Study of 188 Pregnancies in China

Xue Peng^{1,2},Jiao Lan^{1,3}, Jing Fu^{1,2}, Wei Huang^{1,2}, Aiyun Xing^{1,2}, Peizhi Zhou⁴, Jing Tan^{1,2}

1West China Second University Hospital, Sichuan University,China; 2Key Laboratory of Birth Defects and Related Diseases of Women and Children, Ministry of Education,China; 3The First People's Hospital of Shuangliu District,Chengdu,sichuan, China; 4West China Hospital/West China School of Medicine, Sichuan University,china.

OBJECTIVE

This study aims to retrospectively evaluate the influence of the timing of bromocriptine withdrawal on pregnancy outcomes in patients with pituitary prolactin–secreting microadenomas, analyzing its effects on both maternal health and fetal development.

METHODS

A total of 188 pregnant patients diagnosed with pituitary prolactin–secreting microadenomas, who delivered at the Department of Obstetrics and gynecology, West China Second University Hospital of Sichuan University between January 2005 and June 2023, were included in this study. The patients were categorized into four groups based on their use and duration of bromocriptine therapy: Group A (46 patients) discontinued treatment at least one month prior to conception; Group B (49 patients) used bromocriptine until pregnancy was confirmed (≤ 8 weeks); Group C (53 patients) continued therapy until the end of the first trimester (8+1 to 12 weeks); and Group D (40 patients) continued bromocriptine use until the late stages of pregnancy (12+1 weeks until delivery). Maternal and neonatal outcomes were compared across these groups.

RESULTS

- Among the 188 patients, the incidence of neurological symptoms during pregnancy varied significantly across the groups ($P=0.000$), with the highest prevalence in Group A (21.7%) and minimal to no symptoms in Groups B, C, and D.
- The live birth rates and miscarriage rates did not show statistically significant differences across the groups ($P=0.508$). Premature birth rates were 6.5%, 6.2%, 13.2%, and 0% for Groups A, B, C, and D, respectively. Notably, the incidence of small–for–gestational–age (SGA) infants increased with prolonged bromocriptine use, while large–for–gestational–age (LGA) rates decreased, though these trends were not statistically significant ($P=0.068$). Median gestational age differed significantly across groups ($P=0.000$), but neonatal weights remained comparable ($P=0.471$). No neonatal asphyxia occurred in any of the four groups of patients.

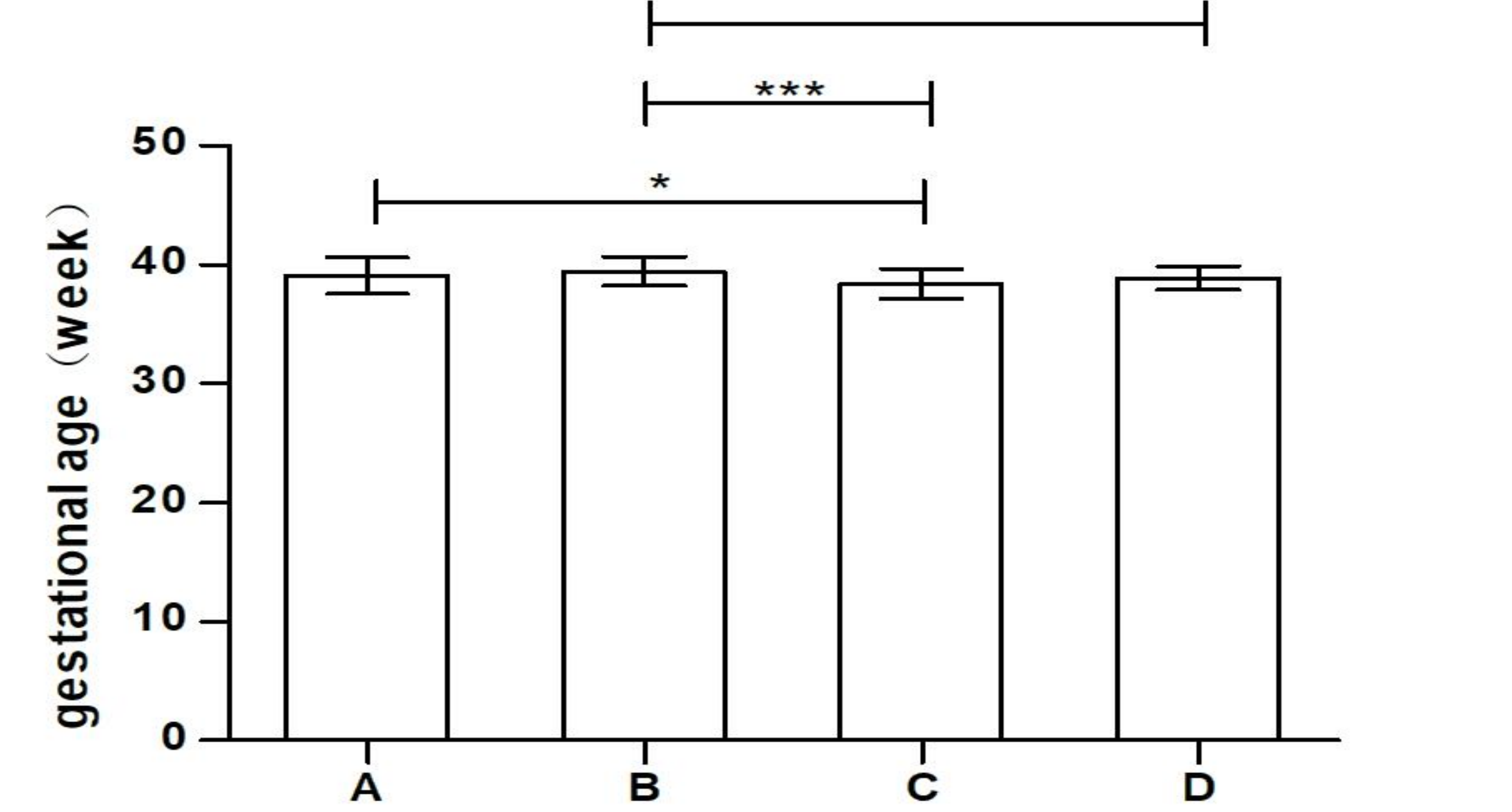
Detailed neonatal outcomes are presented in Table1 and Figure1.

Table 1 Neonatal Outcomes in Patients with Prolactin–Secreting Microadenomas by Bromocriptine Use Duration

		Group A (n=46)	Group B (n=49)	Group C (n=53)	Group D (n=40)	P
Number of fetuses (%)	Single ton	43 (93.5)	48 (98)	48 (94.3)	37 (92.5)	0.465
	Multiple fetuses	3 (6.5)	1 (2)	3 (5.7)	3 (7.5)	
	Term healthy infant	37 (80.4)	44 (89.8)	42 (79.2)	38 (95)	
Neonatal outcomes (%)	Preterm infant	3 (6.5)	3 (6.2)	7 (13.2)	0	0.068
	SGA	0	0	2 (3.8)	2 (5)	
	LGA	3 (6.5)	1 (2)	1 (1.9)	0	
	Miscarried infant	3 (6.5)	1 (2)	1 (1.9)	0	
the birth weight of neonates (kg)		3.20±0.51	3.29±0.40	3.16±0.42	3.16±0.38	0.471
gestational age of neonates (week)		39.29 (38.71–40)	39.43 (39.14–40.11)	38.71 (37.61–39.25)	39 (38–39.68)	0.000

Note: For twins or multiple fetuses, take the average value of neonatal weight.

Figure 1 Distribution of Neonatal Gestational Age across the four patient groups



CONCLUSIONS

Discontinuation of bromocriptine after pregnancy confirmation is generally safe for patients with pituitary prolactin–secreting microadenomas. However, for patients with pre–existing neurological or ophthalmological symptoms, or those untreated prior to pregnancy, there is a heightened risk of tumor progression during gestation, warranting close monitoring and potential continuation of dopamine agonist therapy. Although prolonged bromocriptine use may contribute to lower birth weights, further prospective studies are needed to elucidate the long–term effects of bromocriptine on fetal development.