

Perinatal outcomes of chronic placental abruption and chronic abruption oligohydramnios sequence in a multicenter study in Japan.

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(1), Introduction

Chronic placental abruption (CPA) followed by chronic abruption oligohydramnios sequence (CAOS) are characterized by persistent genital bleeding in early pregnancy period and reported to be related with poor neonatal outcomes. However, the perinatal outcomes were not clarified in CPA and CAOS. This study investigated that perinatal outcome of CPA and CAOS in a multicenter study.

(3), Diagnostic criteria for chronic placental abruption and CAOS

Chronic placental abruption (CPA)

- (1), clinically significant vaginal bleeding in the absence of placenta previa or their identifiable source of bleeding
 - (2), persistent genital bleeding until delivery intermittently
 - (3), delay of at least seven days after the initial bleeding before labor onset
- All criteria (1)-(3) are met

Chronic abruption oligohydramnios sequence (CAOS)

in addition to the above diagnostic criteria for CPA, all (1) - (5) criteria are fulfilled.

(4), documentation of normal amniotic fluid volume initially

(5), oligohydramnios without clinical evidence of ruptured membranes

(from diagnostic criteria by Elliot et al. and modified by our institute)

Control group

Delivered from 22 to 35 weeks of gestation.

Main reasons for preterm delivery were preterm labor, preterm rupture of membrane, fetal growth restriction and hypertensive disorder of pregnancy.

Gestational weeks at delivery in control group was matched to the study group.

(2), Material & methods

The retrospective cohort study which was performed in singleton pregnant women who delivered at the Japan’s multicenter between 2016 and 2021. This study included that the neonates were born at more than 22 weeks and less than 35 weeks because of long-term postnatal results. The medical records of the pregnant women and newborns (up to corrected at 18 months) were reviewed, and clinical data were extracted. This study compared maternal and perinatal outcomes among the three groups (CPA, CAOS, and control groups).

(4), Results

The table 1 and 2 present the results. Table1; There was no statistically significant difference in the onset of genital bleeding between the two groups. The rate of miscarriage and TOP at less than 22 weeks of gestation was significantly higher in the CAOS (42.5%) compared with CPA (16.3%). Table 2; The mean delivery weeks were 26.8 weeks (22.1-34.6) in CPA, 26.0 weeks (23.0-30.0) in CAOS and 26.6 weeks (23.0-35.7) in control group (p=0.34). Furthermore, there were no significant differences in the neonatal outcomes among these groups (birth weight, Apgar score 1/5, and umbilical artery pH). The CPA and CAOS groups were higher in the rate of inhaled nitric oxide use (26.1%, 47.8% vs 8.3%) and the CPA group had longer duration of steroid use (31 days and 3 days) than the control group. Surprisingly, total infant death at the corrected 18 months and poor neurological prognosis (DQ<70) were not significantly different among the three group.

(5),Conclusions

These results indicated that the outcomes with chronic placental abruption and CAOS did not lead to significantly worse outcomes than the control group in Japan. These results could serve as a useful information for pregnant women that were complicated with chronic placental abruption and CAOS. However, the number of study and control cases were insufficient and further prospective studies will be needed in the future.



Ultrasound images and placental findings characteristic of CPA and CAOS

Table1. Perinatal outcomes in early pregnancy bleeding, miscarriage, and termination of pregnancy in CPA and CAOS.

parameter	CPA (n=55)	CAOS (n=40)	p value
initial genital bleeding (weeks)	12.4 (6.0-31.7) n=52	12.7 (5.4-25.6) n=39	0.54
initial genital bleeding in the first trimester	27 (51.9%) n=52	21 (53.8%)	1.00
detection rate of the subchorionic hematoma in the first trimester	31 (56.4%)	26 (65.0%)	0.53
Duration of persistent genital bleeding (days)	74 (9-169) n=43	58 (14-134) n=23	0.36
miscarriage and termination of pregnancy < 22 weeks of gestation	9 (16.3%)	17 (42.5%)	<0.01

data are presented as median (range) or n (%)

Table2. Maternal delivery outcomes and infants prognosis at corrected 18 months among CPA, CAOS, and control groups.

parameter	CPA (n=46)	CAOS (n=23)	control (n=60)	p value
delivery weeks (weeks)	26.8 (22.1-34.6)	26.0 (23.0-30.0)	26.6 (23.0-35.7)	0.34
birth weight (gram)	877 (445-2,040)	762 (510-1,440)	821 (369-2,534)	0.26
Apgar score (1 minute)	4 (1-9)	4 (0-8)	5 (0-9)	0.37
Apgar score (5 minutes)	7 (1-10)	6 (1-9)	7 (0-10)	0.07
umbilical artery pH	7.36 (6.82-7.46) n=33	7.35 (7.23-7.50) n=16	7.35 (6.82-7.53) n=55	0.95
tracheal intubation	32 (69.6%)	20 (87.0%)	50 (83.3%)	0.06
inhaled nitric oxide therapy	12 (26.1%)	11 (47.8%)	5 (8.3%)	<0.01
number of days of systemic steroid therapy for late circulatory failure	31 (4-98) n=19	8 (1-130) n=13	3 (1-91) n=25	0.002
intraventricular hemorrhage (≥Papile grade3)	0 (0%)	0 (0%)	1 (1.7%)	0.87
necrotizing enterocolitis	1 (2.2%)	2 (8.7%)	0 (0%)	0.05
chronic lung disease 36	20 (47.6%) n=42	12 (63.2%)	28 (48.3%)	0.53
introduction of home oxygen therapy	7 (16.3%)	5 (26.3%)	9 (15.5%)	0.54
Total infant death at the corrected 18 months	3 (6.5%)	4 (17.4%)	2 (3.3%)	0.21
poor neurological prognosis (DQ<70)	3 (9.1%) n=33	3 (17.6%) n=17	7 (15.2%) n=46	0.62

DQ: developmental quotient

data are presented as median (range) or n (%)