Abruptio placentae: perinatal outcome in normotensive and hypertensive patients in Basra, Iraq

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انفصال المشيمة الباكر: حصيلة ما حول الولادة بين الأمهات ذوات ضغط الدم السوي أو العالي في البصرة ، العراق

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خلاصة : تم تشخيص مئة وأربع وخمسين حالة من انفصال المشيمة الباكر في المدة من كانون الأول/ ديسمبر 1995 إلى آب/ أغسطس 1996 ، بمعدل وقوع قدره 2% . وكان ضغط الدم سوياً لدى 104 من هؤلاء المريضات بينما كان مرتفعاً لدى 50 مريضة . ولوحظ ارتفاع معدل انفصال المشيمة الباكر في الفئة العمرية 15-20 سنة بين المصابات بارتفاع ضغط الدم . كما وجد أن ارتفاع ضغط الدم كان عاملاً سببياً مهماً في البكريات ، وحدث انفصال المشيمة الباكر من الدرجة الثالثة بمعدل أكبر بين المصابات بارتفاع ضغط الدم . بل إن المريضات بضغط الدم المرتفع اللواتي كانت ولادتهن طبيعية كن أكثر استعداداً للوضع قبل الأسبوع السابع والثلاثين من مدة الحمل . وكان معدل وفيات الأمهات حوالي الولادة 52.0% بين المصابات بارتفاع ضغط الدم بالمقارنة مع 29.8% بين ذوات ضغط الدم السوي .

ABSTRACT A total of 154 women were diagnosed with abruptio placentae during the period from December 1995 to August 1996 giving an incidence of 2%. Of these, 104 were normotensive and 50 were hypertensive. There was a higher incidence of abruptio placentae among the age group 15–20 years in hypertensive patients. Hypertension was also found to be an important factor for primigravidae, and abruptio placentae grade III occurred significantly more often in the hypertensive group. Even the hypertensive women who delivered normally were more likely to deliver before 37 weeks gestation. The perinatal mortality was 52.0% for hypertensive women compared with 29.8% for normotensive women.

L'hématome rétro-placentaire: issue périnatale chez des patientes normotendues et hypertendues à Bassora (Iraq)

RESUME Un hématome rétro-placentaire a été diagnostiqué chez 154 femmes au total durant la période allant de décembre 1995 à août 1996, ce qui donne une incidence de 2%. Sur ces 154 femmes, 104 avaient une tension artérielle normale et 50 souffraient d'hypertension. L'incidence de l'hématome rétro-placentaire était plus forte dans le groupe d'âge 15–20 ans chez les patientes hypertendues. On a en outre constaté que l'hypertension était un facteur important pour la primigeste et l'hématome rétro-placentaire de troisième degré se produisait plus souvent dans le groupe des patientes hypertendues. Même chez les femmes hypertendues qui ont eu un accouchement normal, la probabilité d'accoucher avant les 37 semaines de grossesse était plus grande. La mortalité périnatale s'élevait à 52% chez les patientes hypertendues contre 29,8% chez les patientes normotendues.

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Introduction

The causes of abruptio placentae, premature separation of the placenta, are unknown. However, many maternal risk factors have been identified, including maternal age [*1*], parity [*1*], socioeconomic and marital status [*2*], tobacco [*3*] and cocaine use [*4*], previous abruptio placentae, multifetal gestation [*5*], premature rupture of membranes [*6*] and hypertension [*7*]. Hypertensive disorders during pregnancy have accounted for a relatively high incidence of all cases of abruptio placentae that occur [*7*]. However, there is controversy as to the outcome of women with hypertensive disorders and abruptio placentae compared with normotensive women with abruptio placentae. The objective of this study was to determine the perinatal outcome in normotensive and hypertensive women with abruptio placentae.

Subjects and methods

The study covered all women with abruptio placentae (n = 154) delivered between December 1995 and August 1996 at Basra Maternity and Children's Hospital. Only those women who delivered singletons beyond 20 weeks gestation were included in the study. In the hospital there are two premature units, fetal monitoring, ultrasound equipment, a blood bank and paediatric wards. Maternal and neonatal medical data were obtained, including maternal age, parity and gestational age at delivery.

The women with abruptio placentae were divided into two groups according to their hypertensive (n = 50) and normotensive (n = 104) status. Hypertension was diagnosed based on either two measurements of ≥ 90 mmHg made on two or more consecutive occasions and taken at least 4 hours apart, or on one measurement of ≥ 110 mmHg. The two groups were compared with regard to antepartum, intrapartum and neonatal data.

The chi-squared (χ^2) test was used as a test of significance. It was not used in a sample of less than five. Differences were regarded as significant when $P < 0.05$.

Results

The incidence of abruptio placentae from December 1995 to August 1996 was 2% (154 abruptio placentae patients out of 7680 total deliveries). There was a higher incidence of abruptio placentae among the age group 15–20 years in hypertensive patients (Table 1). An increased incidence of abruptio placentae was also detected among primigravidae in the hypertensive group (Table 1). Abruptio placentae grade III occurred significantly more often among the hypertensive group (Table 2). There were insignificant variations in the

Table 1 Age distribution and parity of patients with abruptio placentae

Variable	Normotensive (n = 104)		Hypertensive (n = 50)	
	No.	%	No.	%
Age (years)				
15–20	10	9.6	14	28.0
21–30	48	46.2	24	48.0
31–40	38	36.5	10	20.0
41–50	8	7.7	2	4.0
Parity				
0	24	23.1	18	36.0
1	14	13.5	12	24.0
2	15	14.4	6	12.0
3	10	9.6	8	16.0
4	3	2.9	0	–
5	40	38.5	6	12.0

Table 2 **Abruptio placentae with regard to grading**

Grade	Normotensive (*n* = 104)		Hypertensive (*n* = 50)	
	No.	%	No.	%
I	34	32.7	8	16.0
II	22	21.2	12	24.0
III	48	46.1	30	60.0

$\chi^2 = 4.855$, $P > 0.05$

Table 3 **Antenatal complications in patients with abruptio placentae**

Antenatal complication	Normotensive (*n* = 104)		Hypertensive (*n* = 50)	
	No.	%	No.	%
Premature uterine contraction	42	40.4	8	16.0
Preterm rupture of membranes	8	7.7	2	4.0
Urinary tract infection	22	21.2	8	16.0
Trauma	4	3.8	0	–

Table 4 **Antenatal care, gestational age and mode of delivery in patients with abruptio placentae**

Variable	Normotensive (*n* = 104)		Hypertensive (*n* = 50)	
	No.	%	No.	%
Antenatal care[a]				
Good	17	16.3	10	20.0
Poor	23	22.1	16	32.0
None	64	61.5	24	48.0
Gestational age (weeks)[b]				
28–36	30	28.8	32	64.0
> 37	74	71.2	18	36.0
Mode of delivery[c]				
Normal vaginal delivery	82	78.8	26	52.0
Instrument delivery	4	3.8	7	14.0
Caesarean section	18	17.3	17	34.0

[a] $\chi^2 = 2.6$, $P > 0.05$
[b] $\chi^2 = 17.35$, $P < 0.01$
[c] $\chi^2 = 21.76$, $P < 0.01$

antenatal complications of normotensive and hypertensive patients (Table 3). However, there was a high percentage of women not attending antenatal care in both groups (57%) (Table 4). The hypertensive women were more likely to deliver before 37 weeks gestation and were delivered more often by caesarean section whereas more normotensive women were delivered by normal vaginal delivery ($P < 0.05$) (Table 4).

There was no great difference in neonatal birth weight between the two groups and most babies weighed between 1500 g and 2500 g (Table 5). Neonates of hypertensive mothers had a higher incidence of Apgar scores < 3 at one minute and < 5 at 5 minutes but the difference was not statistically significant (Table 5).

Discussion

The results indicate that hypertension and abruptio placentae are closely related. The incidence of all types of hypertension in patients with abruptio placentae in general obstetrics has been reviewed [7]. The incidence ranged from 11.3% to 64.0% and is consistent with the 26.8% hypertensive cases reported at the University of California, USA [8]. Others claim that hypertension and abruptio placentae are unrelated

Table 5 **Neonatal birth weight and Apgar scores in abruptio placentae**

Neonatal data	Normotensive (n = 104)		Hypertensive (n = 50)	
	No.	%	No.	%
Birth weight (g)				
1500–2500	58	55.8	32	64.0
> 2500	46	44.2	18	36.0
Apgar score				
1 minute				
< 3	6	5.8	13	26.0
< 5	70	67.3	16	32.0
5 minutes				
< 5	3	2.9	17	34.0
< 7	70	67.3	7	14.0

Perinatal mortality in hypertensive women was 26 out of 50 (52.0%)
Perinatal mortality in normotensive women was 31 out of 104 (29.8%)

[*1,9*], and several reports have discounted the importance of the relation between hypertension and abruptio placentae [*3,10,11*]. It has been proposed that elevation of blood pressure associated with abruptio placentae is an effect rather than a cause of the condition [*3,10*]. It is speculated that hypertension is caused by vasoconstriction secondary to haemorrhage or release of vasoactive substances. However, we believe that hypertension is a predisposing or causative factor in a significant proportion of cases of abruptio placentae.

Abruptio placentae is divided into four groups according to clinical presentation and severity [*12,13*]. Grade 0 is a retrospective diagnosis of abruptio placentae; grade I includes patients with only vaginal bleeding; grade II includes patients with vaginal bleeding, concealed haemorrhage, uterine tenderness and fetal distress; and grade III includes patients with vaginal bleeding, concealed haemorrhage, uterine tenderness, fetal death and sometimes coagulopathy. There were significantly more patients with grade III abruptio placentae among those with hypertension compared with normotensives in our study. These results are in agreement with others [*8,13*].

Even hypertensive women who were delivered normally were still more likely to deliver before 37 weeks gestation. The high percentage of normal vaginal delivery observed in both groups was due to the high incidence of grade III abruptio placentae, which should be managed by normal vaginal delivery. However, increased incidence of caesarean section with abruptio placentae has been observed among hypertensive patients [*8*]. Interestingly, normotensive women were delivered of neonates with birth weights similar to those of the hypertensive group and with a higher incidence of birth weight of 1500–2500 g.

Our results also indicate that hypertensive women with abruptio placentae had a significantly poorer perinatal outcome than the normotensive women with abruptio placentae; the cause of perinatal mortality was asphyxia. Perinatal mortality for hypertensive women with abruptio placentae has been reported to be between 38% and 72% and for normotensive women between 32% and 58% [*7*]. These figures differ from those of Morgan et al. who reported perinatal mortality of 17.2% for hypertensive patients and 13.1% for normotensive patients [*8*]. A direct correlation between the severity of hypertension and perinatal mortality has been previously reported [*14*]. An increased rate of stillbirth with a 5 mmHg increase in arterial pressure over 90 mmHg has been found. Other factors might increase perinatal morbidity, such as low birth weight, low Apgar scores, low umbilical cord pH values, increased preterm delivery and an increased caesarean section rate.

The present study has confirmed the association between hypertension and

abruptio placentae. Hypertension affected both the incidence and outcome of abruptio placentae. Also, these results give a better understanding of the hypertension–abruptio placentae relationship in the area.

References

1. Paterson ME. The aetiology and outcome of abruptio placentae. *Acta obstetricia and gynecologica Scandinavica*, 1979, 58:31–5.
2. Saftlas AF et al. National trends in the incidence of abruptio placentae, 1979–1987. *Obstetrics and gynecology*, 1991, 78:1081–6.
3. Naeye RL, Harkness WL, Utts J. Abruptio placentae and perinatal death: a prospective study. *American journal of obstetrics and gynecology*, 1977, 128:740–6.
4. Chasnoff IJ et al. Temporal patterns of cocaine use in pregnancy: perinatal outcome. *Journal of the American Medical Association*, 1989, 261:1741–4.
5. Karegard M, Gennser G. Incidence and recurrence rate of abruptio placentae in Sweden. *Obstetrics and gynecology*, 1986, 67:523–8.
6. Nelson DM, Stempel LE, Zuspan FP. Association of prolonged, preterm premature rupture of the membranes and abruptio placentae. *Journal of reproductive medicine*, 1986, 31:249–53.
7. Abdella TN et al. Relationship of hypertensive disease to abruptio placentae. *Obstetrics and gynecology*, 1984, 63:365–70.
8. Morgan MA et al. Abruptio placentae: perinatal outcome in normotensive and hypertensive patients. *American journal of obstetrics and gynecology*, 1994, 170: 1595–9.
9. Haynes DM. Premature separation of the placenta. *American journal of obstetrics and gynecology*, 1966, 27:155–9.
10. Davey DA. Hypertensive disorders of pregnancy. In: Whitfield CR, ed. *Dewhurst's textbook of obstetrics and gynaecology for postgraduates*, 5th ed. Oxford, Blackwell Science Ltd, 1995:175–215.
11. Scott JS. Antepartum haemorrhage. In: Whitfield CR, ed. *Dewhurst's textbook of obstetrics and gynaecology for postgraduates*, 4th ed. Oxford, Blackwell Science Ltd, 1986:188–99.
12. Arias F. *Practical guide to high-risk pregnancy and delivery*, 2nd ed. St Louis, Mosby Inc., 1992:175.
13. Sher G. A rational basis for the management of abruptio placentae. *Journal of reproductive medicine*, 1978, 21:123–9.
14. Page EW, Christianson R. The impact of mean arterial pressure in middle trimesters upon the outcome of pregnancy. *American journal of obstetrics and gynecology*, 1976, 125:740–6.