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DIC; INCIDENCE, CAUSES AND MATERNAL OUTCOME IN BASRAH MATERNITY AND CHILDREN HOSPITAL

Muhsin Al-Sabak

C.A.B.O.G. Assistant Professor, Department of Obstetric and Gynaecology, University of Basrah College of Medicine, Basrah; IRAQ.

Summary

Thirteen cases of DIC were studied retro and prospectively for the period from 1st June 1999 till 30th June 2000 in Basrah Maternity and Children Hospital, with an age range of 25-42 years and a parity range of 1-7. They were proved clinically by combined supervision of a Physician and an Obstetrician and the assessment of prothrombine time and platelets count. Seven of them eventually died due to uncontrollable bleeding. The remaining six survived the attack. Genital tract injuries (3 cases), placenta accretes (2 cases), amniotic fluid embolism (2 cases), postoperative Caesarian section (2 cases), incompatible blood transfusion (1 case), induced abortion (1 case), pre-eclampsia (1 case) and hydatidiform mole gestation (1 case) were noticed to be the major precipitating factors for the problem. The total number of deliveries during the period of the study was (11235).This gives an incidence rate of 1.15/1000 live births. Eight cases (62%) were of low social class, four cases (40%) of medium social class and only one case (8%) of high social class. The present study also probed the role of different other parameters in DIC like parity, presence/absence of ANC and the availability of fresh blood. The presenting study was also compared to different other studies done on the same subject, which shows that there was only seven cases of Maternal death due to DIC (for the period 1988-1992) in Basrah Maternity and Children Hospital. So we think that our results indicates that the problem of DIC is increasing during recent years, probably due to defective management.

Introduction

The phenomenon of disseminated intra vascular coagulation (DIC) is an important disorder in Obstetric and Gynaecology practice [1]. DIC is always a secondary phenomenon and the mainstay of manengment is therefore to remove the initiating stimulus if possible [3]. The induction of coagulation cascade can result in deposition of fibrin throughout the smaller vessels and consumption of coagulation factors,

Correspondence to:
Dr. Muhsin Al-Sabak
P.O. Box 1633
Basrah; IRAQ.

particularly factors V and VIII, can result in a bleeding problem [2]. The coagulation disorders can be triggered by G-ve organisms as in septic abortion, severe pre-eclampsia, placental abruption, amniotic fluid embolism, retained dead fetus, prolonged shock, and hydatidiform mole gestation [3].

DIC according to its severity can be graded in to three grades; compensated low grade, uncompensated but no homeostasis failure and lastly rampant with haemostatic failure [6]. Whole fresh blood is no longer used in UK because there is insufficient time to complete hepatitis, human immunodeficiecy virus (HIV) screening and blood grouping tests before it is released from transfusion center[3]. Fresh frozen plasma, Platelets concentrates, cryo-precipitate and plasma protein fraction (albumin) all these components can help patient with early stages of DIC[3,10].

Material and methods

This is a retro and prospective study done in Basrah Maternity and Children Hospital for the period from the 1st of June 1999 till 30th June 2000. The study was designed to collect cases of DIC occurring in this hospital during this period. The data was collected from those who attended the hospital either to deliver or for other gynecological problems. A total number of thirteen cases of DIC were recorded during the period of the study. All women were between 25-42 years of age and had a parity range of 1-7. They were proved clinically by combined supervision of a Physician and an Obstetrician (as appearance of petiche, unclottable blood and by checking platelets counts of <150000/cmm and prolonged prothrombine time).

Different parameters were also studied to look for their relation to the studied problem like precipitating factors, parity, attendance to ANC and the availability of fresh blood. ANC was divided in to good, poor and no ANC where the visits to the ANC were >5, (2-5) and <2 respectively. Social class was also taken inconsideration and it was divided into low, medium and high depending on the level of education (primary, secondary school or university level respectively). The Chi-square x^2 test or appropriate student tests were used as tests of significance. Differences were recorded as significant whenever the probability (p) value was less than 0.05. The aim of the study is to look for the incidence of DIC in our hospital and to check for its main precipitating factors, which could help us in the prevention of this disastrous problem and to compare our results with other previous studies done on similar subject.

Results

It is shown in table I that the major precipitating factor of DIC was genital tract injuries (23.3%). While pre-eclampsia, incompatible blood transfusion, hydatidiform mole and induced abortion were the least common causes (7.7%).

Predisposing factor	No. of cases	Incidence
Genital tract injury	3	23.3%
post operative C/S	2	15.3%
Amniotic fluid embolism	2	15.3%
Placenta previa	2	15.3%
Pre-eclampsia	1	7.7%
Incompatible blood transfusion	1	7.7%
Induced abortion	1	7.7%
Hydatidiform mole gestation	1	7.7%

Table I: causes of DIC (P) value of >0.05 (not significant)

Table II shows those 8 cases (62%) had poor ANC with evident statistical significant association between those patients with poor ANC and the

occurrence of this syndrome. Although DIC was noticed more frequently among patients with low parity (1-3), it was not significant statistically as is shown in Table III. Table VI shows that there was a statistically significant association between the availability of fresh blood and the favorable maternal outcome from this syndrome with a P value of <0.05. The presenting study also shows that patient with low social class were affected more frequently with this disastrous syndrome, as shown inTable V. with a P value of <0.05.

Precipitating factors	Good ANC (>5 visit)	Poor ANC (2-5 visit)	No ANC (<2visit)
Genital tract injuries	0	2	1
Post operative c/s	1	1	0
Amniotic fluid embolism	0	2	0
Placenta accreta	1	1	0
Pre-eclampsia	0	1	0
Incompatible blood	0	1	0
Hydatidiform mole	1	0	0
Induced abortion	1	0	0

(P value) <0.05 X^2 *=3.62*

Table II. The relationship of ANC to the occurrence of DIC.

Precipitating factors	parity 1-3	(4-5)	>5
Genital tract injuries	3	0	0
Post operative C/S	1	1	0
Amniotic fluid embolism	2	0	0
Placenta accreta	0	0	2
Pre-eclampsia	1	0	0
Incompatible blood	0	0	1
Hydatidiform mole	0	1	0
Induced abortion	1	0	0

P value <0.05 (not significant)

Table III. The relationship of parity to the occurrence of DIC.

Precipitating factors	Fresh blood (<72 hrs)	Old blood (>72 hrs)	No blood	Women who survived
Genital tract injuries	1	1	1	2
Post operative C/S	0	2	0	1
Amniotic fluid embolism	1	1	0	1
Placenta accreta	0	1	1	0
Pre-eclampsia	0	1	0	0
Incompatible blood	1	0	0	0
Hydatidiform mole	0	1	0	1
Induced abortion	0	1	0	1

(P value <0.05) X^2 *=3.41*

Table VI. The effect of the availability of fresh blood on the maternal outcome

Social class	No. of cases	%
Low	8	62
Medium	4	30
High	1	8

Table V. The relationship of social class to the occurrence

Discussion

DIC is one of the major obstetrical dilemmas that could face the Obstetrician. It is never a primary problem, and it is always secondary to some general stimulation of coagulative activity [1,7]. Its importance to us comes from the critical situation that we face for the time being, as there is no blood bags for a long period of time, as for all other components like platelets concentrate, blood product and other clotting factors which are not available because of the effects of economic sanction on our country. Most of the cases of DIC are noticed after delivery as was found in our study[3,7].

Because placental separation during third stage of labor represents a major homeostatic challenge to the mother [5,9], adequate fibrin generation is required to stop bleeding from the placental beds and the fibrin already depleted in patients with DIC[6,8], hence, the chance of DIC is increasing post-delivery[6].

Plasma fibrinogen rises during pregnancy by about 50% which means double the amount of fibrinogen is available to the pregnant women as it is for other clotting factors except factors XI and XIII [5,7]. ANC visits showed no effects on prevention of this syndrome, and there was no significant correlation between parity and the development of this syndrome. But there was significant association between preparation of fresh blood and the favorable maternal outcome from this syndrome. There was also a statistically significant association between the development of this syndrome and the social class as it was noticed in 62% of lower social class women.

The recorded maternal mortality rate for this study was 54% of the total cases, and it was found to be the major cause of death in our hospital followed by thrombo-embolism in contrast to other studies done in England and Wales which showed that the main cause of death in their countries is thrombo-embolism [11]. A study was conducted by Edwar[12] during the period 1988-1992 who studied the Maternal Mortality in Basrah showed only seven cases of DIC during the period of his study. This indicate that the problem is increasing now a days mainly probably due to unavailability of blood product and fresh blood due to lack of blood bags because of the effects of economic sanction on our country.

Conclusion

DIC is a major obstetrical dilemma that could face obstetrician, and it was found to be an increasing problem nowadays in our country due to the unavailability of fresh blood and other components, and due to the effects of economic sanction on our country.

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