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Systemic lupus erythematosus: How does it affect pregnancy outcome?

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Systemic lupus erythematosus: How does it affect pregnancy outcome ?

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- Objective** : *To study the pregnancy outcome in pregnant patients complicated with Systemic lupus erythematosus (SLE).*
- Setting** : *Department of Obstetrics and Gynecology, Faculty of Medicine, Chulalongkorn University.*
- Reserch design** : *Retrospective study*
- Materials and Methods** : *The case records of pregnant patients diagnosed with SLE between 1987-1997 were reviewed. The analysis focused primarily on pregnancy outcomes, including fetal death in utero (FDIU), premature delivery, term pregnancy, route of delivery and Apgar scores of the newborns.*
- Results** : *Fifty-two pregnancies were identified in 51 patients. One patient-record was discarded due to incompleteness of the data, leaving 51 pregnancy cases in the study. One patient carried twins and this resulted in 52 newborns for analysis. The mean age of the patients was 27.9 ± 4.5 years. Fifty seven percent of the patients delivered by cesarean section. The reasons for this operation were*

pregnancy induced hypertension (PIH) in 31 % and compromising growth - restricted fetuses in 13.8 %. Twenty two percent of the pregnancies ended prematurely and was due to PIH in 54.5% of the cases. Thirty one percent of the newborn were small for their gestational age at delivery. The Apgar scores of the newborns were less than 7 at 1 minute in 15.4 % of the cases.

Conclusions : *Pregnant patients complicated by SLE carried a high incidence of premature delivery and operative delivery, mostly from worsening PIH. Awareness and careful monitoring of such at - risk patients may improve, their pregnancy outcome.*

Key words : *Pregnancy, SLE .*

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บุญชัย เชื้อไพโรจน์กิจ, วันทนา ธารามาศ, สมชาย ธนวัฒนาเจริญ, ศักนัน มะโนทัย, เขื่อน
ตันนินันตร, ธีระพงษ์ เจริญวิทย์. Systemic lupus erythematosus: ส่งผลกระทบต่อการตั้งครรภ์
อย่างไร?. จุฬาลงกรณ์เวชสาร 2542 เม.ย; 43(4): 205-11

- วัตถุประสงค์** : เพื่อศึกษาผลกระทบของภาวะ Systemic lupus erythematosus ต่อผล
ลัพธ์ของการตั้งครรภ์
- สถานที่ทำการศึกษา** : ภาควิชาสูติศาสตร์-นรีเวชวิทยา คณะแพทยศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย
- รูปแบบการวิจัย** : การศึกษาแบบย้อนหลัง
- วัสดุและวิธีการ** : ได้ทำการทบทวนประวัติคนไข้ที่ตั้งครรภ์และพบว่ามี SLE ร่วมด้วยตั้งแต่ปี
พ.ศ. 2530 ถึง พ.ศ. 2540 โดยมุ่งเน้นที่ผลลัพธ์ของการตั้งครรภ์ เช่น ภาวะ
ทารกตายในครรภ์ การคลอดก่อนกำหนด การคลอดครบกำหนด วิธีการ
คลอด คะแนน Apgar ของทารกแรกคลอดและทำการวิเคราะห์โดยใช้สถิติ
เชิงพรรณนา
- ผลการศึกษา** : พบมีสตรีมีครรภ์ที่มีภาวะ SLE ร่วมด้วย 52 ราย เนื่องจากข้อมูลในแฟ้ม
ประวัติ 1 ราย ไม่สมบูรณ์จึงต้องตัดทิ้งจากการวิเคราะห์ จึงเหลือครรภ์ทั้ง
สิ้น 51 ครรภ์ มีภาวะครรภ์แฝด 1 ราย ทำให้มีทารกแรกคลอดเพื่อการ
วิเคราะห์ 52 ราย อายุเฉลี่ยของสตรีมีครรภ์คือ 27.9 ± 4.5 ปี การคลอด
โดยวิธีผ่าท้องคลอดร้อยละ 56.9 มีสาเหตุจากครรภ์เป็นพิษที่รุนแรงร้อยละ
31 และจากสุขภาพของทารกที่เสื่อมลงเร็วร้อยละ 13.8 พบทารกคลอด
ก่อนกำหนดร้อยละ 21.6 สาเหตุจากครรภ์เป็นพิษรุนแรงร้อยละ 54.5 และ
พบทารกมีภาวะไตช้าในครรภ์ร้อยละ 30.8 ทารกแรกคลอดมีคะแนน Apgar
น้อยกว่า 7 ที่ 1 นาทีเท่ากับร้อยละ 15.4
- สรุป** : สตรีมีครรภ์ที่มีภาวะแทรกซ้อนด้วย SLE มีอุบัติการณ์ของการผ่าตัดคลอด
ทางหน้าท้องและการคลอดก่อนกำหนดสูง ซึ่งสาเหตุใหญ่จากครรภ์เป็น
พิษที่เลวลงอย่างรวดเร็ว การเฝ้าระวังติดตามผู้ป่วยกลุ่มนี้อย่างใกล้ชิด
อาจทำให้ผลการตั้งครรภ์ดีขึ้น

Systemic lupus erythematosus (SLE) is a common human autoimmune disorder with a prevalence rate of approximately 1 in 2,000 among the general population.⁽¹⁾ It is defined clinically by abnormalities of multiple organ systems and serologically by the presence of autoantibodies.⁽²⁾ Since the disease primarily affects women in their reproductive age, it is not surprising that obstetricians often get involved in treatment of SLE patients who become pregnant. Previous reports have demonstrated that SLE may affect pregnancy in many aspects. It may increase the risk of preterm delivery, may cause growth-restricted fetus, and may result in fetal death in utero (FDIU).⁽³⁾ The effect of SLE on the pregnancy is more difficult to conclude. Extensive studies have been performed but no unanimous agreement has been made to date.⁽⁴⁾ Data on the outcome of pregnancy in SLE patients in the Thai population is not yet available. Therefore, we aimed to obtain data focusing primarily on the pregnancy outcome in pregnancies complicated by SLE managed in the Department of Obstetrics and Gynecology of Chulalongkorn University.

Materials and Methods

The case - records of all patients with the diagnosis of SLE attending the antenatal clinic over 11 years from 1987 - 1997 and giving birth at the Department of Obstetrics and Gynecology of Chulalongkorn University were reviewed. The diagnosis of SLE was established based on the standard criteria reported previously.⁽²⁾ The data were analyzed primarily in terms of pregnancy outcome (ie: FDIU, premature delivery or term pregnancy). FDIU was defined as the death of the fetus in utero occurring

after 20 weeks of gestation. Premature delivery was diagnosed when delivery occurred before 37 weeks and a term pregnancy was defined as a gestational age of 37 weeks or more. Intrauterine growth restriction (IUGR) was defined as a birth weight of less than the tenth percentile for gestational age based on our reference range.⁽⁵⁾ Descriptive statistics were applied for all data where appropriate.

Results

Patient population : A total of 52 pregnancies were identified in 51 SLE patients. One patient was deleted due to an inadequacy of recorded data leaving 51 pregnancies in the study. One patient carried twins making a total of 52 newborns for analysis. The age of the patients at pregnancy ranged from 21 to 38 years (mean \pm SD = 27.9 \pm 4.5). Gravidity and parity ranged from 1 to 5 (mean \pm SD = 2.1 \pm 1.2) and 0 to 4 (mean \pm SD = 0.6 \pm 0.9), respectively.

Route of delivery : Twenty - nine out of the 51 pregnancies (56.9 %) were delivered by low transverse cesarean section (Table 1). In the cesarean delivery group, 9 of the 29 (31 %) were operated on for PIH and 4 of the 29 (13.8 %) had cesarean sections due to fetal growth restriction and a deterioration of fetal health on testing (Table 2.)

Fetal outcome: The gestational age at delivery ranged from 28 to 41 weeks (mean \pm SD = 37.1 \pm 2.8). Thirty - nine out of the 51 pregnancies (76.5 %) ended in full term. Eleven pregnancies (21.6 %) ended with premature delivery and one pregnancy had FDIU at 36 weeks of gestation (1.9 %) (Table 3). The mean weight of the newborns was 2484.7 \pm 737 gm (range = 630 - 4270 gm.). Of the total of 52 deliveries, there were 16 newborns (30.8 %) weighing less than the

tenth percentile for our reference range. In the premature delivery group, 6 out of 11 (54.5 %) resulted

from worsening PIH, and 2 out of 11 (18.2 %) resulted from severe oligohydramnios (Table 4).

Table 1. Mode of delivery in SLE pregnant patients.

Mode of delivery	Number (N = 51)	Percent
Normal delivery	13	25.5
Vacuum	1	1.9
Forceps	8	15.7
Cesarean section	29	56.9

Table 2. Indication for cesarean section.

Indication	Number (N = 29)	Percent
PIH	9	31
CPD	7	24.1
IUGR with compromised health	4	13.8
Previous cesarean	1	3.4
Abnormal presentation	2	6.9
Placenta previa	2	6.9
Breech primigravida	1	3.4
PROM with unripe cervix	3	10.3

Table 3. Fetal outcome in SLE pregnant patients.

Outcome	Number (N = 51)	Percent
Term	39	76.5
Preterm	11	21.6
FDIU	1	1.9

Table 4. Causes of premature delivery.

Causes	Number (N = 11)	Percent
PIH	6	54.5
PROM	1	9.1
IUGR with deterioration of fetal health	2	18.2
Preterm labor	2	18.2

Apgar scores : Eight out of the 52 newborns (15.4 %) had 1 minute APGAR scores of less than 7. Five of them were small for their gestational age (5/16 = 31.3 %) and 3 were appropriate for their gestational age (3/36 = 8.3 %) .

Discussion

Over an eleven - year period, a total 52 pregnancies with SLE out of 123,987 total pregnancies (departmental statistics) constituted a ratio of 0.42/1000 births, or 1 in 2,384 births. Our series demonstrated an increase in cesarean delivery rate (56.9 %) as compared to a 19 % rate in our general obstetric population (departmental statistics). This figure is quite consistent with the cesarean rate previously reported by Tozman et al. ⁽³⁾ The reason for cesarean section was mainly worsening PIH which accounted for almost one third of the cases. Other major contributors for the operation were cephalopelvic disproportion and fetal compromise. The preterm delivery incidence of 21.6 % in this series is in agreement with the average incidence of preterm delivery of 20 % reported previously ^(6,7) and contrasts with the preterm delivery rate of around 10 % in the normal population. ⁽⁸⁾ The major cause for preterm delivery was mainly PIH (54.5 %) which is consistent with a previous report by John et al in 1998. ⁽⁶⁾ The rate of FDIU in our population was somewhat less than the rate of 6.9 - 8 % reported in other series. ^(8,9) This could be due to less severe clinical disease in our patients as evidenced by the longer mean gestational age in our patient population. The absence of abortion cases in this study could not be compared to others because both induced or spontaneous abortion could be performed or occurred on an

out-patient basis and could have been missed from our review of admission files. The mean birth weight in the study was 2484 gm which is quite similar to the study of Johnson et al. ⁽⁹⁾ The incidence of IUGR reported here was 30.8 % which is much higher than the average incidence of 10 % in the general population.

In conclusion, it appears that the pregnant patients complicated with SLE in our study population carried a high rate of surgical delivery. They also had an increased chance of premature delivery from worsening PIH and of carrying a small baby for its gestational age. Awareness on prevention of PIH may reduce the chance of premature delivery in this at-risk population.

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