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Attitude of pregnant women attending Ramathibodi Hospital toward the "Ramathibodi Placental Utilization Project (Rama PUP)"

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ABSTRACT

Objective To determine the pregnant women's attitude toward the use of placental compartments in the placental utilization project.

Study design Cross-sectional study.

Setting Antenatal clinic, Faculty of Medicine, Ramathibodi Hospital, Mahidol University.

Subjects Five hundreds and eighty six pregnant women attending antenatal clinic at Ramathibodi Hospital.

Main outcome measures The perception and attitude of pregnant women toward the Ramathibodi Placental Utilization Project (Rama PUP); use of amnion for plastic and eye surgery, use of umbilical cord blood and stem cells for transfusion and transplantation, and use of placental cotyledons, as feedstuff, for animal.

Results The results showed that 16% of pregnant women were aware of the use of amniotic membranes for eye surgery, 13% learned about the food from placental cotyledons, 7% knew about the use of amniotic membranes for eye surgery and 6% knew that umbilical cord blood could be used for transfusion and transplantation. Most of the women (95%) agree with the use of amniotic membranes for plastic and eye surgery, cord blood for transfusion and transplantation. However, 28% of them disagreed with the use of placental cotyledons for animal feedstuff.

Conclusion The use of placental compartments for plastic surgery, eye surgery, transfusion and transplantation were accepted by most pregnant women while almost 30% of them disagreed with the use of placental cotyledons for feedstuff. We need to inform the advantage and disadvantage of this project to the general public.

Key words: attitude, placenta, pregnancy, utilization

The number of livebirths in Thailand is over one million per year. It is estimated that over 500 tons of placentas are disposed annually. Nowadays, burying and incinerating are common practices for placentas disposal. These processes are costly and cause pollution, we have developed "The Ramathibodi

Placental Utilization Project (Rama PUP)" as a multidisciplinary approach to use placental compartments for teaching, research and treatment.[1,2]

Amnion has been used as a biological dressing for burn wounds.[3-6] It has also been used in eye surgery such as repairing persistent epithelial defect, repairing ulcer in advanced ocular cicatricial pemphigoid and Stevens-Johnson syndrome.[7-9]

Umbilical cord blood is used for autologous blood transfusion in the fetus with anemia. It is of benefit in reducing the problems of graft versus host disease (GVHD) and sensitization.[10,11] Umbilical cord blood with high level of hematopoietic stem cells can also be used for bone marrow transplantation.[12,13] Umbilical vessels are used as a model to practice microsurgery. We are now studying about placental ingredients and trying to use placental cotyledons as an animal feedstuff.[1,14] However, ethics and social perception for this project are one of the important issues to be concerned.

The objective of this survey is to study the pregnant women's perception and attitude toward the use of placental compartments in the Ramathibodi Placental Utilization Project (Rama PUP).

Material and method

During January and April 1999, five hundreds and eighty six pregnant women attended antenatal clinic at the Department of Obstetrics and Gynaecology, Faculty of Medicine, Ramathibodi Hospital, Thailand, were asked about their perception and attitude toward the utilization of the placental compartments by the anonymous self-administer questionnaires. The questions were: the maternal demographics data, their perception and attitude toward the use of placental compartments; amnion for plastic and eye surgery, umbilical cord blood and stem cells for transfusion and transplantation, and placental cotyledons, as feedstuff, for animal. Perception and attitude were measured as a dichotomous scale.

Data were analysed by unpaired t-test, Pearson's chi-square test and presented as mean, standard deviation using the statistical software package SPSS for windows version 7.5 (SPSS Inc., Chicago, Illinois, U.S.A.).

Results

Table 1 shows the demographics data of the pregnant women enrolled in this study. The mean age was 27.7+4.9 (15-43) years and the mean gestational age was 26.7+10.4(5-39) weeks. Fifty-five percent of them were nulliparas.

Table 2 demonstrated the perception and attitude of the pregnant women toward the "Rama PUP". Ninety six percent of women agreed with the use of amnion for wound dressing in plastic surgery while 94% of them agreed with the use of amnion for eye surgery and the use of cord blood for transfusion and transplantation. The main reasons were: they wanted to help the patients (75%), they wanted to get benefit from the use of placenta and they did not want to destroy the placenta which caused pollution (18%). Those who disagreed giving the reason that they afraided of transmitted diseases from the placental compartment so it should be destroyed (5%).

Twenty eight percent of the pregnant women disagree with the use of placental cotyledons for feedstuff while only 5% of them disagree with the use of the other placental compartments for the other purposes. The main reasons were they did not want to give parts of their babies to the animals (18%) and they also concerns about transmitted diseases; such as hepatitis and AIDS, to the animals and to the persons who ate those animals (10%). They thought that it was unnecessary to use the placenta for feedstuff since animal food is now availble. However, most of the women agreed that we should get benefits from these waste products and, at the same time, should avoid increasing pollution. They also accepted that placenta could be a better source of feedstuff due to its rich of neutrients and could save the budget from buying commercial food.

There were no difference in the maternal age ($P = 0.58$), gestational age ($P = 0.17$), parity ($P = 0.92$), career ($P = 0.9$), address ($P = 0.42$), homeland ($P =$

0.28), education (P = 0.14), and family income (P = 0.48) between the women who agreed and disagreed with the use of placental cotyledons for feedstuff.

Table 1. Demographic data of the studied pregnant women (continue)

	Number(%) N=586
Address	
Bangkok	505(86.18)
Adjacent provinces	52(8.88)
Central (except Bangkok, Adjacent provinces)	14(2.38)
North	2(0.34)
Northeast	10(1.71)
East	2(0.34)
South	1(0.17)
Homeland	
Bangkok	122(20.82)
Adjacent provinces	16(2.73)
Central (except Bangkok, Adjacent provinces)	88(15.02)
North	64(10.92)
Northeast	217(37.03)
East	20(3.41)
South	59(10.07)

Table 2. Perception and attitude of the pregnant women to the utilization of placenta

	Know Number(%) (n=586)	Agree Number(%) (n=586)
Amniotic membranes for plastic surgery	98(16.72)	563(96.08)
Amniotic membranes for eye surgery	43(7.34)	556(94.88)
Cord blood for transfusion and transplantation	37(6.31)	552(94.2)
Placental cotyledons for animal food	77(13.14)	417(71.16)

Discussion

The objectives of "Rama PUP" are the effective use of placental compartments for treatment, teaching, and research which can also save the cost. However, social perception for this project is an important issue to be concerned. This survey was to study the pregnant women's knowledge and opinion on the use of placental compartments because their placenta might be used for this project.

The demographics data demonstrated that the women paticipated in this study represented the middle class family staying in Bangkok (table 1). Only 10 to 20% of them knew about the use of placental compartments in medical treatment although most of these methods such as plastic surgery and blood transfusion had long been used.[3-5,11,12] This might be resulted from an ineffective promotion which could effect the perception and attitude of the people.

Most of the women in this study (94-96%) agreed with the use of placental compartments for plastic surgery, eye surgery, transfusion and transplantation because they wanted to donate their placentas to help the patients more than to destroy them and caused pollution. However, almost 30% of them disagreed with the use of placental cotyledons for feedstuff. Although placental cotyledons, with high level of protein,[1,14] were the good nutrient resources for the ill and malnutrition animals, the use of placental cotyledons for feedstuff was objected. The main reasons were their uncomfortable feelings to give human parts to animals. They were also afraid that these transmitted diseases; such as hepatitis and AIDS, might spread from the placenta back to people who ate this meat. However, most of the hospitals have screened for hepatitis and Anti HIV during the antenatal care.

This study only represented the perception and attitude of pregnant women attending Ramathibodi Hospital. The use of amnion for plastic and eye surgery and the use of cord blood for transfusion and transplantation seem to be accepted by the pregnant women but the use of placenta for feedstuff was refused by many women. Although there was no difference between the women who agreed and disagreed with the use of placenta for feedstuff, the larger study should be conduct before making the conclusion or continue this part of project.

Public concern is an important factor effecting this project. It is important to inform the advantage and the disadvantage of this project to the public and to reevaluate the public opinion in the larger groups of people.

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OBSTETRICS

Genetic Amniocentesis for Prenatal Diagnosis at Bhumibol Adulyadej Hospital: four years experience

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ABSTRACT

Objective To evaluate results of amniocentesis for prenatal diagnosis of chromosome abnormality at Bhumibol Adulyadej Hospital

Design Retrospective descriptive study.

Setting Perinatal unit, Department of Obstetrics and Gynaecology, Bhumibol Adulyadej Hospital.

Subjects Nine hundred twenty patients who had amniocentesis at perinatal unit, Department of Obstetrics and Gynaecology, Bhumibol Adulyadej Hospital, from January 1, 1996 to December 31, 1999.

Results During a four years period nine hundred twenty women underwent genetic amniocentesis for chromosome diagnosis. The most common indication was elderly gravidarum. Other indications were, family chromosome disorder, previous Down syndrome, maternal anxiety and malformed fetus. We found fifteen chromosome abnormalities. One case was contaminated and two cases had tissue culture failure. Most of the amniotic fluid were clear, only seven cases had brownish colour, thirteen cases had blood - stained and six cases had meconium-stained. There were two fetal loss in our study.

Conclusion Genetic amniocentesis were highly successful performed with low complications. Among 920 cases, 15 chromosome abnormalities were detected with this procedure. It is a safe method for prenatal chromosome diagnosis by well-trained operators.

Key words: prenatal diagnosis, amniocentesis, chromosome aberrations

Following the successful culturing of fetal cells from amniotic fluid by Steele and Berg[1] in 1966, mid-second-trimester amniocentesis was established as the safe and accurate standard technique for prenatal diagnosis.[2-4] The procedure is performed on an outpatient basis and is nearly painless. In Thailand, those who are at risk for having a chromosome abnormality fetus will be counselled for mid-second-trimester amniocentesis but not all of them have been done due to inadeguate genetic laboratory and inexperience of operators. In Bhumibol Adulyadej Hospital, we have been performing amniocentesis since 1988. Our cases were increased every year up until 1998. After we developed chorionic villus sampling technique, the number of amniocentesis was slightly decreased. This report analyzed the indications for amniocentesis, the gestational ages, maternal ages and the results of karyotyping.

Materials and Methods

A total of 920 cases of genetic amniocentesis were performed from January 1, 1996 to December 31, 1999. The most common indication for amniocentesis was advanced maternal age. After process of counselling and signing consent form, ultrasound examination was performed with curvilinear probes (Acuson 128xp). Identification of the dividing membrane and placental localization were accomplished. The patient's abdomen was prepped with povidone-iodine and draped. The transducer was covered by a sterile glove and introduced into the field. The transducer was placed to indentify a pocket of amniotic fluid on either side suitable for amniocentesis. A 21-gauge spinal needle was introduced under ultrasound guidance into the amniotic sac. An assistant aspirated amniotic fluid without altering the position of the transducer. The initial 1-2 mL of amniotic fluid was discarded and 20 mL of amniotic fluid was aspirated and sent to laboratory for tissue culture with separated syringe. After the procedure, ultrasound examination was repeated to confirm fetal heart motion.

Results

All of 920 women were performed amniocentesis at our hospital during the study period, 3 cases needed to repeat amniocentesis due to 2 culture failure and 1 bacterial contamination. Most common indication was elderly gravida as shown in Table 1. Ninety-one percent of amniocentesis were done during 16-18 weeks (Table 2). The distribution of the women ages shown in Table 3, 848 (92.17%) were more than 35 year of age. The most common age group were 35-39 years. The youngest age was 20 and the oldest age was 44 as shown in Table 3. Cytogenetic results of chromosomal abnormality were shown in Table 4. The success rate in performing amniocentesis with first puncture was 96.52%. 97.17% of the fluid was clear, 0.76% was brownish colour, 0.65% was meconium-stained and 1.42% had blood-stained. All cases with chromosome abnormalities were terminated except 47 XXY and 46 XX+16P^{+}. There were two fetal loss in our study.

Discussion

The major cytogenetic indications for amniocentesis were advanced maternal age, chromosome abnormality in previous child and family chromosome disorder which contributed about 98.58% of all cases. The minimum maternal age was 20 years and the maximum maternal age was 44 years. The most common maternal age range were 35-39 years. The most common gestational age at amniocentesis was 17 weeks. While we scheduled to perform the procedure between 16-18 weeks. Almost all of the late cases had late booking for antenatal care.

Most of the amniotic fluid was successfully obtained at first attempt (96.52%) and was clear (97.17%). Three cases required second amniocentesis because of two cases had culture failure and one case had contamination. Overall fail cultured rate was 0.32% which was less than other studies (1.74%)[5] Nearly all amniocentesis were performed by well-trained operators. Most of 2 puncture cases were performed by general obstetricians who were not staffs in our perinatal unit. It has been concluded by working group all over the world that genetic amniocentesis is a safe, accurate, reliable with minimal risk if it is performed by an expertise operators.[6] Gerbie an Elias[7] recommended that amniocentesis should be performed by obstetricians and gynecologists 1) who have experience in this procedure, 2) with the availability of high quality ultrasonography and, 3) with access to a laboratory with experience in culturing and analyzing amniotic fluid cells. Finegan and associates found that second trimester amniocentesis does not appear to compromise intelligence, academic achievement, usual-motor-perceptual abilities, fine motor co-ordination, speech articulation, behavior, social competence, growth or health in children at seven years of age[8] whose mother had done this procedure. Complications related to prenatal diagnosis utilizing amniocentesis are intrauterine fetal death,[9] leakage of amniotic fluid[10] direct fetal injury[11] and most commonly miscarriages.[12-14] Fetal loss rates for amniocentesis have ranged from a low of 1.0%[15] to 1.3%.[16] Our study had only 2 fetal loss (0.21%) which was fewer

than previous studies. We found fifteen cases of chromosome abnormality, most of them were from advanced maternal age (93.3%) and the most common cases of chromosome abnormality were trisomy 18 and trisomy 21. Ferguson-Smith and Yates [17] reported all chromosome aberrations in maternal age 35 years and over was about 2.26% which is larger than our study (1.16%).

In conclusion, amniocentesis performed around 16-18 weeks is a safe method for prenatal diagnosis. The risk for pregnancy loss and number of multiple puncture is low in our experience. The diagnosis guides us to the proper management and prevents birth with serious chromosome disorders. For safety reasons, we suggest that amniocentesis should be performed at centers where there are experience operators.

Table 1. Indications for amniocentesis

Indications	No	%
Elderly gravidarum	848	92.17
Family chromosome disorder	30	3.26
Previous Down syndrom	29	3.15
Maternal anxiety	9	0.98
Malformed fetus	4	0.44
		100%

Table 2. Gestationals al ages of the subjects

Gestational ages (weeks)	No	%
16	159	17.28
17	400	43.48
18	279	30.33
19	44	4.78
20	16	1.74
21	22	2.39
		100%

Table 3. Ages and numbers of subject

Ages (years)	No (1996)	No (1997)	No (1998)	No (1999)	Total
20-24	1	1	1	0	3
25-29	3	4	4	3	14
30-34	15	15	8	17	55
35-39	181	215	133	181	710
40-44	38	43	27	30	138
	238	278	173	231	920

Table 4. Abnormal karyotypings ages & indications

No	Types of Abnormality	Maternal ages (years)	Indications
1	47XX+21	40	Elderly
2	46XY, inv(9)(p13;q12)	40	Elderly
3	47XXY	40	Elderly
4	46XX+16P+	40	Elderly
5	47XX+18	39	Elderly
6	46XY,inv(7) (p11;q12)	38	Elderly
7	47XY+18	38	Elderly
8	47XX+18	38	Elderly
9	47XX+21	38	Elderly
10	47XY+13	37	Elderly
11	47XY+21	37	Elderly
12	47XY+18	35	Elderly
13	47XX+18	35	Elderly
14	47XX+21	35	Elderly
15	47XY+18	29	Malformation

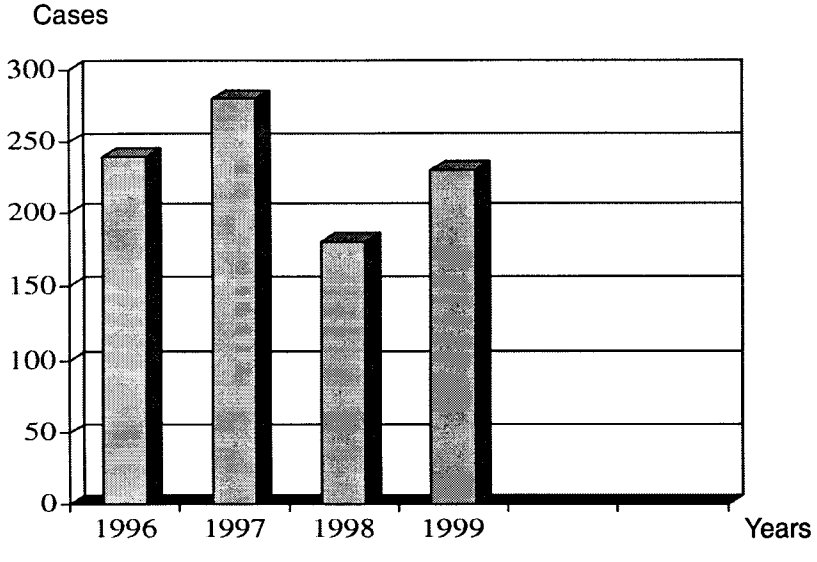


Fig. 1. Total numbers of amniocentesis by years.

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