

## Comparison of perinatal outcome after 2nd trimester amniocentesis using 22G and 20G needle

Dear Editor,

Genetic amniocentesis was introduced in prenatal diagnosis for chromosomal abnormalities more than 40 years ago<sup>1</sup>. The most important risk for amniocentesis is the procedure-related miscarriage (0.11-1.00 %)<sup>2</sup>. Regarding the size of the needle used in amniocentesis, recent data showed that the 20G larger-caliber needle performs better because the duration of the procedure is significantly shorter and the placental bleeding at transplacental passages occurs less frequently<sup>3</sup>.

We conducted a retrospective, single center, comparative study in order to compare fetal loss rate and perinatal outcome after 2<sup>nd</sup>-trimester amniocentesis performed with 20G and 22G needles (Scientific Bioethical Committee of Aristotle University of Thessaloniki, Greece: A13748/31-8-2010). The study population consisted of all consecutive women who underwent amniocentesis in a single perinatal unit (Center for Prenatal Control, Thessaloniki, Greece) from 2000 to 2006. Women with multifetal pregnancies and fetuses with abnormalities were excluded. All amniocenteses were performed by a single operator (first author). The procedure was performed with either 20G or 22G needle of the same type and manufacturer (SFM GmbH 20GX3<sup>1/2</sup> inch or 0.90 x 90mm and SFM GmbH 22GX3<sup>1/2</sup> inch or 0.70 x 90mm; in group A, 22G needles were used from 2000-2003 and in group B, 20G needles from 2003-2006). Perinatal outcome (pregnancy loss, time of loss, premature delivery, time of premature delivery, term delivery, fetal weight at delivery, fetal sex, and mode of delivery) was followed up. Statistics were processed with the Statistical Package for the Social Sciences (SPSS), version 17.00 (SPSS Inc., Chicago, IL, USA). In total, 3,054 women were studied: 1,519 in group A and 1,535 in group B; valid data existed for 2,718 women: 1,329 (group A) and 1,390 (group B). The results are summarized in Table 1. A multiple logistic regression analysis was performed to examine the relationship of the type of the needle with the fetal loss before 24 weeks of gestation, after controlling for demographic and clinical variables. After adjustment of clinical and demographic parameters, no statistical difference between the two needle groups was found in relation to fetal loss before 24 weeks. However, we have to consider as limitations of the study that gravidity and 1<sup>st</sup> trimester bleeding were variables associated with increased likelihood of fetal loss.

In conclusion, this study confirms that amniocentesis with a 20G needle appears to have similar fetal loss rates compared with a 22G needle.

**Key words:** Amniocentesis, perinatal outcome, fetal loss rate, needle caliber, needle size

### Conflict of interest

Authors report no conflicts of interest.

### References

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**Table 1:** Data regarding maternal age, gravidity, gestational age at amniocentesis, procedure's technical details, and pregnancy outcome in the groups of women who had amniocentesis with G22 needle (group A) and G20 needle (group B).

	Group A (G22)	Group B (G20)	p
Number of women	1,329	1,389	
Demographics			
Maternal age	35.68 ± 3.93	36.06 ± 4.19	0.026*
Gravidity	2.70 ± 1.51	2.43 ± 1.37	<0.0005*
BMI	25.8 ± 3.7	26.3 ± 4.8	ns
Gestational age at delivery	38.32 ± 2.15	38.38 ± 1.81	ns
Mode of delivery (VD/CS)	38 % / 52 %	47 % / 53 %	ns
Birth weight (gr)	3,218.1 ± 548.4	3,227.2 ± 491.5	ns
Details of amniocentesis			
Gestational age at amniocentesis	19.18 ± 1.75	19.91 ± 1.78	<0.0001*
>1 needle insertions / attempts	73 (1.4 %)	58 (1.7 %)	ns
Transplacental insertion	200 (15.1 %)	220 (15.8 %)	ns
Dark stained liquor	16 (1.6 %)	28 (2.4 %)	ns
Bloody taps	6 (0.6 %)	4 (0.3 %)	ns
Fetal losses -			
Premature deliveries			
Fetal loss before 24 weeks	5 (0.5 %)	6 (0.5 %)	ns

Values are presented as means ± standard deviation or as numbers with percentages in brackets, \*: statistically significant, ns: not statistically significant, BMI: body mass index, VD: vagina delivery, CS: cesarean section.

Athanasiadis A<sup>1,2</sup>, Petrakis P<sup>1</sup>, Mikos T<sup>1</sup>

<sup>1</sup>1<sup>st</sup> Department of Obstetrics and Gynecology, Papageorgiou General Hospital, Aristotle University of Thessaloniki

<sup>2</sup> Prenatal Diagnosis Center of Thessaloniki  
Thessaloniki, Greece

**Corresponding author:** Apostolos P. Athanasiadis, Professor in Obstetrics and Gynecology, Aristotle University of Thessaloniki, Ag.Sofias 15 Str, 54623, Thessaloniki, Greece, e-mail: apostolos3435@gmail.com