

# Recent Incidence of Trisomy 21 in a Japanese Hospital

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## To the Editor:

Trisomy 21, the chromosome abnormality responsible for over 95% of Down syndrome, is one of the most common conditions encountered in the genetic clinic. Recently, the increasing share of pregnancies with advanced maternal age and its impact on the increased incidence of trisomy 21 have been reported in the United States [1-3]. Our hospital is one of main perinatal centers in Tokyo, Japan (about 2,100 deliveries per year). In this study, we examined the recent incidence of trisomy 21 associated with maternal age at our hospital.

We reviewed the obstetric records of all Japanese singleton pregnancies at our hospital from January 2005 through January 2011. Demographic information and the characteristics of labor were extracted from patient charts. The conditions of the study patients were Japanese singleton pregnancies whose estimated date of delivery were from January 2006 through December 2011 and managed from 14 weeks or earlier at our hospital. In this study, thus, we have excluded the cases as follows (1) multifetal pregnancies, (2) non-Japanese pregnancies, (3) the time of first visit of our hospital at  $\geq 15$  weeks' gestation, and/or (4) spontaneous fetal demise before 22 weeks' gestation. We examined the maternal age at age of the estimated date of delivery.

There were 28 cases of trisomy 21 in 10964 Japanese singleton pregnancies (1/392). In our hospital, there were 39 cases of trisomy 21 in total during this period; however, there were 8 cases of trisomy 21 referred to our hospital at  $\geq 15$  weeks' gestation due to fetal abnormality, 2 non-Japanese cases of trisomy 21 and 1 case of trisomy 21 in twin pregnancy. During this period, the average maternal age of all pregnancies was  $32.3 \pm 5.5$  years old and 35% of the mothers were 35 years old or more at the estimated date of delivery; while the average maternal age in the cases with trisomy 21 was  $38.0 \pm 4.7$  years old.

The incidence of trisomy 21 in cases of maternal age of  $< 35$

years (3 cases, average:  $27.7 \pm 3.5$  years), 35 - 39 years (15 cases, average:  $37.5 \pm 1.1$  years) and  $\geq 40$  years (10 cases, average:  $41.7 \pm 1.9$  years) were 1/2364, 1/209 and 1/74, respectively. These incidences by maternal age were almost similar to those reported previously in the United States [4].

Of the 28 cases of trisomy 21, 11 cases (39%) were diagnosed as trisomy 21 prenatally using amniocentesis due to maternal request. Ten cases of them (91%) were artificial aborted; thus, the incidence of live births with trisomy 21 was 1/608 (18 cases). The average maternal age in the cases diagnosed prenatally was significant higher than that diagnosed postnatally ( $40.1 \pm 3.3$  vs.  $36.6 \pm 5.0$  years,  $p < 0.01$  by unpaired *t*-test). The tendency is also similar to that reported in the United States [1-3].

In conclusion, in Japan the recent increased share of pregnancies with advanced maternal age seemed to contribute to the increased incidence of trisomy 21 as observed in other countries.

## References

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