The Fetal Growth Velocity and Placental Weight/Birth Weight Ratio in Concordant and Discordant Twins at 20–36 Weeks of Gestation

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Abstract：Objectives：To establish fetal growth velocity curves in twin pregnancy and to investigate the relationship between growth patterns and the placental weight/birth weight ratio (PW–BWR). Methods：Fifty–one concordant and forty discordant twins had ultrasound examinations at weekly or biweekly intervals, from 20 weeks until delivery. The fetal growth velocity (FGV) was calculated for each fetus. Disparities in the FGV and the PW–BWR between larger (L) and smaller (S) fetuses of concordant and discordant twins were determined. Results：Concordant L and S and discordant L fetuses showed similar growth velocity patterns, reaching a maximum at 31 weeks. Discordant S fetuses were growth–retarded at 21－23 weeks, followed by "catch–up" growth until 31 weeks, and then were growth–restricted thereafter. In the concordant twins, no difference in the PW–BWR between L and S fetuses were shown at ＜31 weeks and ≥31 weeks. In the discordant L and S fetuses, the PW–BWR of S fetuses were higher than that of the L fetuses at ＜31 weeks ($P<0.05$), but not different between the L and S fetuses at ≥31 weeks. Conclusion：These findings may suggest an adaptive mechanism in discordant twin fetuses, which maximizes the fetal growth potential of both fetuses, by compensatory changes in the placental weight.

Key words：Twin pregnancy, Fetal growth velocity, Placenta, Ultrasonography