Expression and protein content of IGF-I and IGF-I receptor in placentas from small, adequate and large for gestational age newborns

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In humans, a direct relationship between IGF-I cord blood levels and birth weight has been demonstrated. To determine the placental IGF-I, IGF-II and IGF-IR mRNA and protein contents in full-term pregnancies from appropriate for gestational age (AGA), small for gestational age (SGA) and large for gestational age (LGA) newborns, we studied the placentas from 35 AGA, 30 SGA and 28 LGA pregnancies. The IGF-I, IGF-II and IGF-I receptor (IGF-IR) placental mRNA and protein contents were determined in the basal and chorionic plates of the placenta. IGF1 and IGF1R mRNA was higher in SGA compared to AGA and LGA placentas and lower in LGA compared with AGA placentas. In addition, a higher protein content of IGF-I and IGF-IR was observed in SGA compared with AGA and LGA placentas and lower contents in LGA compared with AGA placentas. These results suggest that the higher IGF-I and IGF-IR contents observed in SGA placentas and the lower contents observed in LGA placentas compared with AGA placenta