

# Insulin-like growth factors (IGFs) and IGF binding proteins-1, -2, and -3 in newborn serum: Relationships to fetoplacental growth at term

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Cord sera were obtained from term, Chilean newborns exhibiting various patterns of intrauterine growth and assayed for IGF-1, IGF-2, IGFBP-1, IGFBP-2, and IGFBP-3 by specific radioimmunoassays (RIA). Serum levels of each peptide were correlated with birth weight (BW), ponderal index (PI), and placental weight (PW). Total IGF-1 levels correlated with BW ( $r = 0.665$ ,  $P = 0.0001$ ), PI ( $r = 0.527$ ,  $P = 0.004$ ), and PW ( $r = 0.596$ ,  $P = 0.0017$ ). In contrast, IGF-2 failed to correlate with any growth parameter. Of the three binding proteins, IGFBP-3 exhibited the strongest relationship to each growth parameter. IGFBP-3 correlated significantly with BW ( $r = 0.71$ ,  $P < 0.0001$ ), PI ( $r = 0.782$ ,  $P < 0.0001$ ), and PW ( $r = 0.57$ ,  $P = 0.0029$ ). In addition IGFBP-3 levels positively correlated to IGF-1 levels ( $r = 0.614$ ,  $P = 0.0005$ ). By contrast, circulating IGFBP-1 and IGFBP-2 were inversely related to IGF-1 levels. All five peptides were subjected to multiple regression analysis and related to BW. Significant