

High levels of interferons alpha and beta in cord and maternal blood and simultaneous presence of interferon in trophoblast in an African population.

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Abstract:

A high concentration of interferon-alpha (IFN-alpha) (> 5 U/ml) in cord blood was used as the criterion for establishing our study group. In a collection from deliveries by 269 Kenyan women, 16 such cord samples with matching maternal blood and placental biopsies were identified. These 16 were studied in detail together with 23 randomly selected among those with low cord IFN-alpha levels. The levels of IFN- in retal blood correlated with levels in their mothers for both IFN-alpha and beta but not for IFN-gamma. IFN-alpha was furthermore demonstrated in villous and decidual trophoblast from 15 (94%) placentae from donors with high IFN-alpha in the cord blood but not in the placenta of any low IFN level donors. In contrast, IFN-beta was not demonstrated in any placenta. These observations suggest simultaneous IFN induction in the three compartments, transplacental IFN transport, or trophoblast production of IFN to both circulations. Looking for IFN inducers, we did serologic tests for nonspecific indicators of inflammation and for specific virus and protozoan infections, but these showed no relation to elevated IFN levels. Immunohistology also revealed no evidence of a number of placental infections. The cause of the high levels of IFN-alpha could still be infectious but remains unexplained and may be noninfectious.