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Title: The impact of teratogenic factors in the development of pulmonary hypoplasia in children

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Body: Aim: To establish the potential role of teratogenic factors in the development of pulmonary hypoplasia associated with multisystemic anomalies in children. Methods: HRCT scans with MPR and 3D reconstructions were used for the assessment of the lung malformations, ECG and EchoCG Doppler – for cardiac pathology confirmation, and USG revealed the renal anomalies. Results: The diagnosis of pulmonary hypoplasia was suspected in the neonatal period after clinical and X-ray examination, but the complex multisystemic malformation was confirmed at 8 months of age. On CT scans, pulmonary hypoplasia was presented by diminished size of the right hemithorax, rised right diaphragm cupola, hyperinflated and hyperlucent left lung, complete mediastinal displacement to the right side. 3D reconstructions revealed narrowing of the right bronchus situated in the left hemithorax and hypoplasia of the right pulmonary artery- 4mm. ECG showed characteristic signs of dextrocardia: negative P wave and positive T wave in I standard deviation, negative P wave in aVR and deep Q wave in aVL. EchoCG Doppler revealed a narrowing of right pulmonary artery of 4,6mm, USG showed the right kidney with increased size(80x35mm) and the absence of the left one. The data concerning fetus exposure to some chemical toxic substances during the pregnancy due to mother's professional condition, could explain this complex malformation in pulmonary hypoplasia. Conclusions: Pulmonary hypoplasia is associated with malformations of the urinary tract, cardiovascular and nervous systems. The teratogenic influence during the embryonic period trigger the malformative changes with renal agenesis that could cause the immaturity of the embryonic lung.