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GHASSEMI JAHANI SA[1], DANIELSON B[2], STROMLAND K[3], KARLSSON J[1], DANIELSSON A[1]. [1]Sahlgrenska Academy, Dep of Orthopaedics, Gothenburg, Sweden, [2]Sahlgrenska Academy, Dep of Radiology, Gothenburg, Sweden, [3]Sahlgrenska Academy, Dep of Ophthalmology, Gothenburg, Sweden. Malformations and Development of Osteoarthritis in Patients with Thalidomide Embryopathy in Sweden

Introduction: All individuals with thalidomide embryopathy (TE) in Sweden have recently been invited to a multidisciplinary follow-up. Besides this orthopaedic part of the study, examinations covering ocular, hearing, speech, and dental pathology and a psychiatric evaluation, were included. This is the first report of the orthopaedic evaluation. Objectives: The aim of this study was to evaluate the skeletal malformations of all extremities and the occurrence of secondary degenerative osteoarthritis (OA) in the lower extremities. Individuals with severe malformations of the upper extremities instead use their feet and lower limbs for activities for daily living. This excessive use and/or abnormal mobility of the lower limbs might lead to an increased risk of development of osteoarthritis in the hips and knees. Methods: Thirty-one patients, 18 men and 13 women, mean age 45.8 years, were included. They all underwent a clinical examination and spiral computed tomography of the lower extremities. Occurrence of malformations and grade of osteoarthritis as well as upper limb function were evaluated. Results: Five out of the 31 individuals with TE had severe malformations of the lower limbs (proximal femoral focal deficiency) and some type of malformations of the upper limbs. Twenty-seven patients had two functional arms and hands with some grip function, despite the fact that 8% of shoulders, 26% of elbows/forearms, and 70% of hands were malformed. However, only 10 patients had a proper pincer grasp in both hands. Osteoarthritis of the hip was found on either side in 38% of the patients and in either knee in 58% of the patients. Patients with an anatomical pincer grasp in only one or no hand had significantly more frequent osteoarthritis in the knee compared to those with pincer grasp in both hands (65 vs. 9%, p=0.004). Discussion: Many patients had malformations of the upper extremity. Although only 10 patients had bilateral pincer grasp, 87% of patients managed well with some type of bilateral gripping. Five patients had major lower-limb malformations. For patients lacking bilateral pincer grasp, osteoarthritis of the knee was more frequent.

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LANGLOIS PH[1], HOYT AT[2], LUPO PJ[3], LAWSON CC[4], DESROSIERS TA[5], SHAW GM[6], ROMITTI PA[7], SYMANSKI E[8], REEFHUIS J[9], MALIK S[10]. [1]Texas Department of State Health Services, Austin, TX, United States, [2]Texas Department of State Health Services, Austin, TX, United States, [3]Baylor College of Medicine, Houston, TX, United States, [4]National Institute for Occupational Safety and Health, Cincinnati, OH, United States, [5]University of North Carolina, Chapel Hill, NC, United States, [6]Stanford University School of Medicine, Palo Alto, CA, United States, [7]The University of Iowa, Iowa City, IA, United States, [8]University of Texas School of Public Health, Houston, TX, United States, [9]Centers for Disease Control and Prevention, Atlanta, GA, United States, [10]University of Arkansas for Medical Sciences, Little Rock, AR, United States. Maternal Occupational Exposure to Polycyclic Aromatic Hydrocarbons and Risk of Selected Birth Defects

Introduction: This series of recently published studies evaluated whether there is an association between maternal occupational exposure to polycyclic aromatic hydrocarbons (PAHs) and various birth defects. Methods: Data were analyzed from 1997–2002 deliveries in the National Birth Defects Prevention Study, a large population-based case-control study in the US. Case groups included neural tube defects (NTDs), oral clefts, heart defects, and gastroschisis. Controls were live births without birth defects. Maternal interviews yielded information on jobs held in the month before through three months after conception. Three industrial hygienists blinded to case/control status assessed occupational exposure to PAHs. Crude and adjusted odds ratios (ORs) with 95% confidence intervals (CI) were estimated using unconditional logistic regression. Results: Maternal occupational PAH exposure was not common, occurring in roughly 3.5% of the control mothers. After adjusting for confounders, the OR for cleft lip with or without cleft palate was 1.47 (95% CI 1.02, 2.12) with a significant adjusted exposure-response relationship (p_{trend} = 0.02). There were no statistically significant associations with any of the congenital heart defects examined. Results for NTDs and gastroschisis were most evident in certain population subgroups. Among women who were normal weight or underweight, the adjusted OR for spina bifida in offspring was 2.59 (95% CI 1.32, 5.07). Mothers who were > 20 years old had an adjusted OR of 2.53 for gastroschisis (95% CI 1.27, 5.04). Conclusion: Maternal occupational exposure to PAHs may be associated with increased risk of cleft lip with or without cleft palate in offspring. Occupational PAH exposure was also associated with risk of spina bifida among offspring of lower weight mothers and with gastroschisis among offspring of mothers who were at least 20 years old.


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