Background
Although ankle and foot involvements are common in juvenile idiopathic arthritis (JIA), they are often neglected. Hip involvement, also common in JIA, may affect these joints by creating a chronic imbalance of the musculoskeletal system. However, no studies have been published on this subject.

Objective
We aimed to describe ankle and foot impairment in a cohort of patients with JIA and to study the correlation between these impairments and the presence of hip arthritis.

Methods
A monocentric cross-sectional study was conducted including JIA patients fulfilling the 2001 ILAR criteria. Patients with congenital malformation of the ankle or foot or with any other foot impairment due to a disease other than JIA were not included. Foot examination was performed on bare feet both in supine and standing position. We completed with an analysis of footprint with a podoscope and shoes examination. Patients were divided in two groups depending on the presence or the absence of hip arthritis on pelvis X-ray, hip ultrasound or hip magnetic resonance imaging.

Results
We included 35 patients (M/F = 15/20). Hip arthritis was noted in 45.7%. Oligoarticular (43.8%) and enthesitis-related arthritis (25%) were the most frequent form of JIA. Functional complaints related to foot and ankle were reported in 34.3% of cases. The pain was the most frequent symptom (91%), mainly in the hindfoot and ankle (50%). Foot pain was more frequently encountered in the absence of hip arthritis (52%, vs 31.2% in presence of hip arthritis). Physical examination revealed limitation of the talocrural joint in 20% of cases and feet tenosynovitis in 14.3% of cases. Achilles tendon enthesitis was found in 8.6% of patients. These abnormalities were more prevalent in the absence of hip arthritis. Half of the patients had hindfoot deviation dominated by hindfoot varus (22.9%). In the group with hip arthritis, a hallux valgus was found in 14.3%, a supraductus of the 2nd toe, and claw toe in one case each. An anomaly of the footprint was noted in 28 patients, including 11 in the group with hip involvement: 7 cases of cavus foot and 4 cases of flat foot. There were no correlations between foot or ankle anomalies with hip impairment apart from an association of flat foot with the absence of coxitis, and a leg length discrepancy more important in the group with hip arthritis.

Conclusions
Our study confirms the frequency of foot and ankle involvement as well as hip arthritis during JIA, hence the importance of their systematic screening even in asymptomatic children. Larger-scale studies would be necessary to evaluate with more precision the relation that there could be between hip and foot impairment.

Key words: juvenile idiopathic arthritis, hip, foot, ankle.