



Epidemiology and health services of juvenile idiopathic arthritis (JIA) in Germany – an analysis based on nationwide SHI-physicians claims data from 2009 to 2015

Susan Thomschke¹ • Mandy Schulz² • Jörg Bätzing²

¹ Geographisches Institut der Universität Bayreuth

² Zentralinstitut für die kassenärztliche Versorgung in Deutschland (Zi), Berlin

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Abstract

Background

Juvenile idiopathic arthritis (JIA) is a chronic, systemic autoimmune disorder that is characterised by joint inflammation of unclear aetiology persisting for a minimum of six weeks in children and adolescents under the age of 16. There are hardly any reliable data available regarding the prevalence and incidence of this disorder in Germany. On a national level, there are only estimates of the frequency of the disorder; furthermore, there are only two epidemiological studies which are limited to a regional scale. The aim of the study was to determine the prevalence and incidence of JIA, and highlight regional differences, on the basis of current and nation-wide statutory health insurance physicians (SHI-physicians) claims data.

Methods

Nation-wide SHI-physicians claims data from the years 2009 to 2015 formed the data basis for the study. A case of JIA was defined by ICD 10 codes M08.- or M09.0 (L40.5), where these were codified as diagnoses for a minimum of two quarters of the calendar year, and additionally were classified as “assured diagnosis”. Subjects included in the analysis were those suffering from the disease of an age from 0 up to and including 19 years of age. The prevalences and incidences were calculated as a ratio of the number of the respective JIA cases to the number of SHI-insured children and adolescents according to KM6 statistics from the Federal Ministry of Health [FMH]. Regional classification of patients was carried out according to patients’ residency. Furthermore, the respective proportions of the specialist groups involved in the treatment of JIA in the ambulatory health care sector were determined.

Results/conclusion

The incidence rates for JIA in the time period from 2011 to 2015 proved to be largely stable. The average value was 16.6 cases per 100,000 children and adolescents, and showed no clear trend over time. The highest incidence rate was 17.4 cases in 2014; the lowest was in 2011 at 16.0 cases per 100,000. The one-year prevalence rate for JIA in the period 2009 to 2015, however, showed a fairly clear and continuous increase from 73.4 to 101.5 cases per 100,000 children and young persons. As this study deals with treatment and diagnosis prevalence due to its methodology, this development indicates an increasing significance of JIA in the routine care of SHI-physicians ambulatory care, which cannot be fully explained by the incidence. A role may be played here by the fact that development

Corresponding author: Dr. Jörg Bätzing
Central Research Institute of Ambulatory Health Care in Germany (Zi)
Salzufer 8 – 10587 Berlin – Tel. +49-30-4005-2419 – E-Mail: jbaetzing@zi.de





towards a modified treatment paradigm for JIA with the use of medication as early as possible following diagnosis and the availability of new options for medication lead to the treatment successes of patients and parents being assessed positively and, as such, out-patient treatment options are accepted more readily by patients than in previous years. The incidences and prevalences demonstrated by this study, based for the first time on national-wide SHI-physicians claims data across Germany, were higher overall than the estimates that have been published to date.

Previous knowledge of JIA was confirmed in terms of gender distribution: female subjects showed an average rate twice as high, constant over all ages, in terms of both incidence and prevalence, when compared with the male subjects (prevalence 119.8 vs. 58.9; incidence 21.8 vs. 11.6 cases per 100,000 children/young persons). Analysis of age ranges, however, showed a higher prevalence and incidence in the age range from 15 to 19 years than in the age range from 0 to 14 years (prevalence 122.2 vs. 75.0; incidence 18.9 vs. 15.6 JIA cases per 100,000 children and adolescents). In the transitional period to adulthood, a gray area can be assumed, in which the diagnosis codes for adult rheumatoid arthritis are not yet applied on a larger scale, but the codes for juvenile rheumatism, i.e. the JIA, continue to be used. One of the reasons for this could be that in this transition period, even after the age of 16, adolescent patients remain in pediatric care for longer. During transition pediatricians might code a newly diagnosed rheumatic disease rather as JIA than adult rheumatic arthritis.

Doctors specialising in paediatrics and youth medicine had the largest share of patients in ambulatory treatment for JIA, at nearly 80%, followed by GPs (including internist doctors with focus in family medicine) with just under 40% in prevalent patients. Rheumatologists and paediatric rheumatologists jointly covered around 20% of the treatment share.

Spatial analysis at the level of the 17 SHI physician association areas in Germany showed a gradient in epidemiological indicators from North/North-East towards South/South-West. These regional variations are comparable with the regional distribution of rheumatoid arthritis (RA) in adults.

Keywords

Incidence, JIA, adolescents, juvenile idiopathic arthritis, children, prevalence

Citation

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