

Bronchial asthma

Introduction

Bronchial asthma represents one of the most common chronic health problems in childhood and adolescence (Gibson et al. 2013; WHO 2013). It is triggered by hypersensitivity of the bronchi to various irritants. This hypersensitivity causes reversible, sudden constriction of the bronchial system that leads to coughing, shortness of breath and wheezing (Berdel et al. 2007). In most affected children, asthma is caused by an allergic reaction, for example to pollen, animal hair or house dust mites (Gibson et al. 2013; WHO 2013). Due to the effects on a child's emotional state, physical and scholar functioning and social interaction, affected persons often consider the illness to be a serious strain (Berdel et al. 2007; Gibson et al. 2013). While typical asthmatic symptoms subside during puberty for approximately half of all affected children, the other half continues to be affected by symptom-related restrictions during adulthood (Lindemann 2000). According to the Federal Statistics Office health expenditure calculation, approximately 282 million euro was spent on the treatment of asthma for children under the age of 15 in 2008 (Federal Statistics Office 2014).

Indicator

The lifetime and 12-month prevalence (“Ever” and “In the last 12 months”) of bronchial asthma was recorded in KiGGS Wave 1. Parents of children taking part in KiGGS for the first time were asked whether the illness had ever been medically diagnosed in their child, whether the illness had appeared in the last 12 months, and whether their child had taken medication for the illness in the last 12 months. Parents of children taking part in the KiGGS follow-up were asked if their child had had the illness since the last KiGGS survey or had used medication for the illness since then, if the illness had been medically diagnosed for the first time during this period, if the illness had appeared in the last 12 months and if their child had taken medication for the illness in the last 12 months. This data was merged to calculate the lifetime and 12-month prevalence (Schmitz et al. 2014).

The tables show the lifetime and 12-month prevalence of bronchial asthma, differentiated according to sex, age and social status.

Key results

- ▶ The lifetime prevalence of bronchial asthma in children and adolescents is 6.3%, while the 12-month prevalence is 4.1%.
- ▶ Asthma affects boys significantly more often than girls. The differences between the sexes are even more noticeable in the lifetime prevalence (7.4% vs. 5.2%) than in the 12-month prevalence (4.6% vs. 3.5%).
- ▶ The difference between the sexes in terms of the prevalence of asthma does not become apparent until from school age onwards.
- ▶ Bronchial asthma is somewhat more common in children and adolescents with low social status than in children and adolescents of the same age group with high social status; however, the differences are not statistically significant.

Conclusion

A comparison of the data from KiGGS Wave 1 with the data collected six years previously in the KiGGS baseline study shows that a slight, statistically significant increase from 3.2% to 4.1% has occurred in relation to the entire age group from 0 to 17 years (Schmitz et al. 2014). This increase can be traced back to a significantly increased prevalence in the age group of 0 to 6 year olds – particularly in girls. Methodical limitations, such as the possibility of increased willingness to participate among parents whose children suffer from asthma, should be considered in the interpretation of the results (Schmitz et al. 2014). The data from the school entry health examination carried out annually in Brandenburg also indicates an increase in the lifetime prevalence of bronchial asthma in pre-school children in the period from 2004 to 2013, whereby the largest increase took place until 2008 and prevalence has remained more or less stable since then (Ministry of Environment, Health and Consumer Protection of the Federal State of Brandenburg 2014). The finding that boys are affected by asthma more often than girls corresponds to the results of the KiGGS baseline study and the school entry health examinations of the federal states (Schlaud et al. 2007; Ministry of Consumer

Protection of the Federal State of Saxony-Anhalt 2013; Ministry of Environment, Health and Consumer Protection of the Federal State of Brandenburg 2014). During adulthood, in contrast, women report suffering from asthma more often than men (RKI 2012; Langen et al. 2013). In international comparisons, according to data from the International Study of Asthma and Allergy in Childhood (ISAAC), Germany lies in the mid-range of countries in terms of the prevalence of asthma (Lai et al. 2009; Gibson et al. 2013). As is apparent from the German Disease Management Guidelines for Asthma, hardly any evidence-based measures for the primary prevention of asthma exist to date, as no final conclusion has been reached yet on the specific causes of the disease (German Medical Association et al. 2013). Abstinence from tobacco, meaning total avoidance of active smoking and exposure to passive smoke, is recommended without reservation.

Note: A detailed description of the study as well as explanations on the method are available on the KiGGS study website, www.kiggs-studie.de, and in Lange et al. (2014). Further results regarding bronchial asthma can be found in Schmitz et al. (2014).

Literature

- Berdel D, Forster J, Gappa M et al. (2007) Leitlinie zum Asthma bronchiale im Kindes- und Jugendalter. *Monatsschr Kinderheilkd* 155 (10): 957–967
- Bundesärztekammer (BÄK), Kassenärztliche Bundesvereinigung (KBV), Arbeitsgemeinschaft der Wissenschaftlichen Medizinischen Fachgesellschaften (AWMF) (Hrsg) (2013) Nationale VersorgungsLeitlinie Asthma – Langfassung, 2. Auflage. Version 5. 2009, zuletzt geändert: August 2013 www.versorgungsleitlinien.de/themen/asthma (Stand: 07.07.2014)
- Gibson GJ, Loddenkemper R, Sibille Y et al. (Hrsg) (2013) The European lung white book. Respiratory health and disease in Europe. European Respiratory Society, Sheffield www.erswhitebook.org (Stand: 07.07.2014)
- Lai CK, Beasley R, Crane J et al. (2009) Global variation in the prevalence and severity of asthma symptoms: phase three of the International Study of Asthma and Allergies in Childhood (ISAAC). *Thorax* 64 (6): 476–483
- Landesamt für Umwelt, Gesundheit und Verbraucherschutz Brandenburg (2014) Zeitreihe zum Indikator: Allergische Atemwegserkrankungen www.gesundheitsplattform.brandenburg.de (Stand: 07.07.2014)
- Landesamt für Verbraucherschutz Sachsen-Anhalt (Hrsg) (2013) Gesundheit von einzuschulenden Kindern in Sachsen-Anhalt: Ergebnisse der Schuleingangsuntersuchung der Gesundheitsämter. Update Nr. 1. Untersuchungsjahre 2010–2012 und 5-Jahres-Zeittrend seit 2008. LAV Sachsen-Anhalt, Magdeburg

- www.verbraucherschutz.sachsen-anhalt.de (Stand: 07.07.2014)
- Lange M, Butschalowsky HG, Jentsch F et al. (2014) Die erste KiGGS-Folgebefragung (KiGGS Welle 1). Studiendurchführung, Stichprobendesign und Response. *Bundesgesundheitsbl – Gesundheitsforsch – Gesundheitsschutz* 57 (7): 747–761
- Langen U, Schmitz R, Steppuhn H (2013) Häufigkeit allergischer Erkrankungen in Deutschland. Ergebnisse der Studie zur Gesundheit Erwachsener in Deutschland (DEGS1). *Bundesgesundheitsbl – Gesundheitsforsch – Gesundheitsschutz* 56 (5/6): 698–706
- Lindemann H (2000) Epidemiologie von Lungenkrankheiten im Kindesalter. In: Petro W (Hrsg) *Pneumologische Prävention und Rehabilitation. Ziele – Methoden – Ergebnisse*. Springer, Berlin, Heidelberg, S 90–92
- Robert Koch-Institut (Hrsg) (2012) Daten und Fakten: Ergebnisse der Studie »Gesundheit in Deutschland aktuell 2010«. Beiträge zur Gesundheitsberichterstattung des Bundes. RKI, Berlin www.rki.de (Stand: 07.07.2014)
- Schlaud M, Atzpodien K, Thierfelder W (2007) Allergische Erkrankungen. Ergebnisse aus dem Kinder- und Jugendgesundheitsurvey (KiGGS). *Bundesgesundheitsbl – Gesundheitsforsch – Gesundheitsschutz* 50 (5/6): 701–710
- Schmitz R, Thamm M, Ellert U et al. (2014) Verbreitung häufiger Allergien bei Kindern und Jugendlichen in Deutschland. Ergebnisse der KiGGS-Studie – Erste Folgebefragung (KiGGS Welle 1). *Bundesgesundheitsbl – Gesundheitsforsch – Gesundheitsschutz* 57 (7): 771–778
- Statistisches Bundesamt (2014) Krankheitskostenrechnung des Statistischen Bundesamtes www.gbe-bund.de (Stand: 07.07.2014)
- World Health Organization (2013) Asthma. Fact sheet N°307. WHO, Genf www.who.int/mediacentre/factsheets/fs307/en/# (Stand: 22.05.14)

Table 1
Prevalence of bronchial asthma in 0 to 17-year-old girls according to age and social status

	Lifetime prevalence		12-month prevalence	
	%	(95% CI)	%	(95% CI)
Girls	5.2	(4.4–6.1)	3.5	(2.9–4.2)
Age				
0 to 2 years	1.4	(0.7–2.6)	1.2	(0.6–2.3)
3 to 6 years	6.8	(4.9–9.2)	5.5	(3.8–7.9)
7 to 10 years	2.8	(2.0–3.9)	2.1	(1.4–3.1)
11 to 13 years	7.3	(5.2–10.3)	4.8	(3.1–7.4)
14 to 17 years	6.6	(5.1–8.6)	3.5	(2.5–4.7)
Social status				
low	4.8	(2.9–7.9)	4.2	(2.4–7.1)
medium	5.6	(4.6–6.8)	3.6	(2.9–4.5)
high	4.2	(3.3–5.5)	2.4	(1.7–3.5)
Total (girls and boys)	6.3	(5.7–6.9)	4.1	(3.6–4.6)

Table 2
Prevalence of bronchial asthma in 0 to 17-year-old boys according to age and social status

	Lifetime prevalence		12-month prevalence	
	%	(95% CI)	%	(95% CI)
Boys	7.4	(6.6–8.2)	4.6	(3.9–5.5)
Age				
0 to 2 years	3.0	(1.5–5.7)	2.5	(1.2–5.2)
3 to 6 years	6.6	(4.8–9.0)	4.6	(3.1–6.8)
7 to 10 years	7.7	(5.8–10.2)	4.7	(3.2–7.0)
11 to 13 years	8.8	(6.9–11.3)	5.2	(3.6–7.4)
14 to 17 years	9.2	(7.6–11.2)	5.5	(4.1–7.3)
Social status				
low	8.8	(6.2–12.2)	6.0	(3.8–9.4)
medium	7.3	(6.3–8.4)	4.5	(3.7–5.6)
high	6.4	(5.0–8.0)	3.7	(2.8–4.9)
Total (girls and boys)	6.3	(5.7–6.9)	4.1	(3.6–4.6)

Editors

Robert Koch Institute
Department of Epidemiology and Health Monitoring
Dr. Benjamin Kuntz, Laura Krause,
Panagiotis Kamtsiuris, PD Dr. Thomas Lampert
General-Pape-Straße 62–66
12101 Berlin

How to quote this publication

Robert Koch Institute (Ed) (2014) Bronchial asthma. Fact sheet on KiGGS Wave 1: German Health Interview and Examination Survey for Children and Adolescents – First follow-up interview 2009–2012. RKI, Berlin
www.kiggs-studie.de

Published: 17.12.2014