

Treatment and resource utilization by asthmatic children in Italy

Objectives
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 To describe treatment and resource utilization by asthmatic children 0-14 years of age.

Methods

Design:

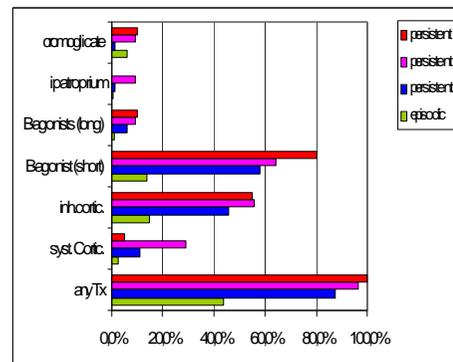
Retrospective cohort study using data from paediatricians that supply information to the Pedianet network, that is maintained by the Telematics Service Society in Padova.

Source population:

All children aged 0-14 years in March 1999 and actively registered with one of the 33 paediatricians that collaborated to the study and used the medical software JB95 for collection of clinical, prescription and administrative data in their practice in 1998. Paediatricians were distributed over Italy (15 North, 10 Central Italy, and 8 from the South/Islands)

Case identification:

Cases of asthma were identified through a sensitive computerised algorithm using the information stored in the computerised medical record of the patients registered with the paediatrician. Search criteria were: the recording of bronchospasm, asthma, or wheezing during the period 1997-1998. Potential cases were manually reviewed by the paediatrician, who excluded all persons with only one period of wheezing during the period 1997-1998.



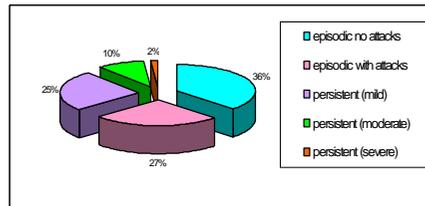
Data collection

Upon consent from the parents specific information was collected by interview regarding socio-economics and the presence of environmental risk factors of asthma. Treatment and clinical characteristics were retrieved from the automated records and verified by interviews with the parents (frequency of asthma attacks and symptoms: cough or heavy respiration after exercise, and cough or heavy respiration during the night). Cases were categorised in 5 classes according to severity based on symptoms and the number of asthma attacks per 6 weeks.

Episodic asthma: no attacks in the last 6 weeks
 Episodic asthma: less than 1 asthma attack every 6 weeks and no symptoms in the last months
 Persistent asthma (mild): at least 1 asthma attack every 6 weeks with a maximum of one symptom, or less than 1 attack every 6 months with at least one symptom in the previous month
 Persistent asthma (moderate): at least 1 asthma attack every 6 weeks with at least 2 symptoms

The source population comprised a total of 28.735 children aged 0-14 years. Within this source population a total of 1365 cases of asthma were identified.

Figure 1: distribution of asthma severity.



Among the asthma cases 59.6% received conventional treatment for asthma, only 3.3% used non-conventional treatment (24 children homeopathic medicine, 4 children phytotherapy). Figure 2 shows the type of treatment according to severity of asthma.

Figure 2: Treatment according to severity of asthma

All children with severe persistent asthma were treated pharmacologically. The use of systemic and inhalation corticosteroids, oral antibiotics, short and long acting B-agonists all significantly increased upon increasing severity of asthma. However a large part of asthmatic children with persistent asthma did not receive inhalation corticosteroids.

Resource utilisation for respiratory disease was higher for children with persistent asthma (see table 1)

Table 1: Resource utilisation for respiratory disease during 6 months between persons with persistent and episodic asthma

	Episodic asthma (n=868) %	Persistent asthma (n=494) %	OR (95%CI)
Ambulatory visits			
0	15.6	5.7	Ref.
1-2	48.9	43.1	1.9 (1.2-3.0)
3-4	23.8	35.0	4.0(2.6-6.4)
5-6	7.6	15.7	5.6(3.3-9.5)
>6	4.1	9.6	6.5(3.6-11.8)
Emergency unit			
0	92.4	81.9	Ref.
1-2	6.9	15.2	2.5(1.7-3.6)
3-4	0.7	2.2	3.6(1.3-10.0)

0	95.2	90.2	Ref.
1-2	4.5	9.2	1.8(1.2-2.9)
3-4	0.2	0.4	1.8(0.3-12.7)
5-6	0	0.2	NA

Conclusion

This study shows that utilisation of resources is substantial especially among children with persistent asthma. However a large part of asthmatic children seems undertreated, especially with inhalation corticosteroids.