Motivations for antibiotic prescription by General Practitioners (GPs) for patients with respiratory tract infection (RTI) in a country with large antibiotic consumption (Belgium). A questionnaire study.

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Abstract

Background:

Antibiotic overprescription in RTI by GPs is an important issue in Belgium. Through a qualitative study (focus group approach) and direct analysis of patients' file with GP's (Lot Quality Assurance Sampling approach), major identified factors for overprescription were (i) the demand of a patient for a fast cure (socio-economical pressure), (ii) the fee-for-service system; (iii) the fear of not providing "best cure"; (iv) distrust of official guidelines (considered largely inapplicable and more based on economical than medical considerations). Our aim was to confirm and expand on these observations through a large scale questionnaire approach.

Methods:

Self-administered questionnaire sent to 282 practicing GPs about actual practice for RTI (2 case vignettes), perception of bacterial resistance and of official guidelines, impact of public campaigns and of GP-directed feedbacks actions from the authorities.

Results:

Usable replies were obtained from 62.7% of the approached GPs. Internal consistency of answers was satisfactory (alpha Cronbach 0.84 and 0.77 for the two case vignettes). Major factors triggering antibiotic prescription were (i) patient's age, frailty, co-morbidities, smoking, living in a nursing home; (ii) deteriorating general condition, symptoms length, fever, fear of complications; (iii) perceived obligation of a fast result. 80 % of GP's knew about resistance rise but most denied it was a problem in their current practice. Opinions about guidelines were scattered (but were seen as not fitting real-life practice), and about 35 % of GP's did not know about them. Nationwide public campaigns were judged as justified, as they tended to decrease patient's demand.

Conclusions:

Guidelines targeted to the GPs should better (i) integrate patient\'s frailty and socio-economical factors; (ii) show the consequences of bacterial resistance; (iii) help providing answers to patient's demand in self-limiting infections; (iv) go beyond simple classification of diseases with their respective treatment; (v) be more independent from financial considerations.

References

[1] Fahey et al. Quantitative systematic review of randomised controlled trials comparing antibiotic with placebo for acute cough in adults. BMJ 316 (7135):906-910, 1998.

[2] Fahey et al. Antibiotics for acute bronchitis. Anonymous. Anonymous. Cochrane Database of Systematic Reviews (4), 2004. http://mrw.interscience.wiley.com/cochrane/clsysrev/articles/CD000245/frame.html

[3] Butler et al. Reducing antibiotics for respiratory tract symptoms in primary care: consolidating 'why' and considering 'how'. BJGP 48:1865-1870, 1998

[4] Garcia-Rey & Aguilar. Importance of local variations in antibiotic consumption and geographical differences of erythromycin and penicillin resistance in Streptococcus pneumoniae. Journal of Clinical Microbiology 40:159-164, 2006.

[5] Feron et al. Guidelines observance by general practitioners for respiratory tract infections: a quantitative study using the "Small Samples Approach" for in-depth, case-based analysis in French-speaking Belgium. 18th European Congress of Clinical Microbiology and Infectious Diseases (ECCMID), 2008;
Feron et al. Evaluation de l'usage des antibiotiques en médecine générale en Belgique francophone: détermination des raisons de la surprescription apparente et de la non-observance des recommandations de bonne pratique. 27ème Réunion Interdisciplinaire de Chimiothérapie Anti-Infectieuse (RICAI), 2007

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Introduction

Antibiotic overuse for respiratory tract infections in general practice has been widely proven and explored in the literature [1-3], and shown to be in direct correlation with levels of bacterial resistance for typical community pathogens such as *S. pneumoniae* [4].

In spite of numerous actions launched by Belgian Public Authorities aimed at both the public (to reduce the demand for antibiotics) and at GP's (setting and dissemination of evidence-based guidelines), antibiotic consumption has remained elevated (3d-4th highest position in Europe; similar to U.S.A. and about 3 x larger than The Netherlands).

Two former studies [5] using (i) a qualitative approach with focus groups, and (ii) a retrospective small-sized cohort study using the Lot Quality Assurance Sampling method, showed that (i) patient demand (direct and indirect) was strongly influencing prescription behaviour by GP's; (b) compliance of GP's to guidelines was very low (37.3 %), with frequent ignorance of these guidelines (30 %).

The present study was initiated to get more insights in the reasons for antibiotic overprescription based on large survey of practicing GP's.

Methods

Design:

Self-administered questionnaire sent to practicing GPs (selected at random in French-speaking Belgium [Brussels/Wallonia; 25-65 years; no other criterion) , and addressing (i) actual practice data; (ii) how the GPs assessed bacterial resistance, official guidelines, public campaigns, feed-back campaigns; (iii) questions related to two frequent situations (clinical vignettes: acute sore throat; acute cough) in which antibiotics should normally not be prescribed.

Collection of data:

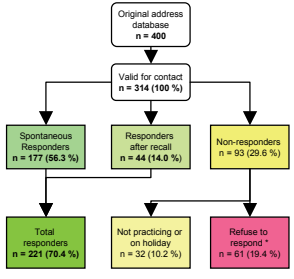
To reach a maximum participation rate, GP's who did not spontaneously reply were sent a first postal reminder, followed, if needed by a phone call, and finally a visit by a Medical student.

Analysis:

Data were encoded and analysed using SPSS software, using verbal rating scale data as continuous variable to calculate mean, standard deviation and median values for each item. Cronbach alpha test was used to test internal consistency of subcategories of items.

Results

1. Response levels (survey validity)



➔ **The response rate was high ensuring the validity of the survey with respect to the target population**

* reasons (as expressed; from most to least): Lack of time, too many solicitations for surveys, boring, there is no point, do not feel like answering, Dutch-speaking

2. Population analyzed (representativity)

Parameter	%	
	Responders	All Belgian GP's
Group Practice (Yes / No / n.a.)	26.6 / **72.3** / 1.1	
Financing (Fee for serv. / Capitation)	**94.9** / 5.1 / 0.0	**98** / 2 [1]
Accreditation (Yes / No / n.a.)	**84.2** / 15.8 / 0.0	**72** / 28 [2]
Training GP's (Yes / No / n.a.)	24.9 / **70.6** / 4.5	
Sex ratio (Male/Female/ n.a.)	**64.4** / 35.0 / 0.6	**72.3** / 27.7 [1]
Age (< 30 / 30-49 / 50-69 / ≥ 70 y)	2.8 / 39.0 / **56.5** / 0.0	1.3 / **50.9** / 43.7 / 4.0

n.a.: no answer
[1] Report from the Belgian Center for Expertise in Health Care (KCE) - data 2003 – 2004
[2] *Journal du médecin* 2008; 1950:6.

➔ **The surveyed GP's are representative of the Belgian GP demography, with, however, a slight excess in age**

3. Perception of antibiotic risks and guidelines

Item (out of 19 included in the analysis)	score (-2: fully disagree +2: fully agree) -2 -1 0 +1 +2
Antibiotics: resistance and downsides	
A1. Bacterial resistance is rising	
A2. Symptomatic drugs are as effective as antibiotics	
A3. Antibiotics present side effects	
A4. Antibiotics are expensive	
A5. Do **you** perceive resistance as a problem?	
Official guidelines	
B1. should be made by scientific societies	
B2. should be made by universities	
B3. are conflicting with other recommendations	
B4. are too restrictive	
B5. aim at saving money	
B6. other recommendations also exist	
B7. are up to date	
B8. should be made by Social Security Authorities	

key: median: 25-75 percentile (rounded); 0.5 -99.5 %

➔ although acknowledged [A1], bacterial resistance is not perceived as a major threat in daily practice [A5]
➔ distrust of guidelines is high [B3 to B7], and suspected of non-scientific and non-medical aims [B5] if made by Social Security Authorities [B1 *vs.* B8]

4. Motivation for antibiotic prescription

Item (out of 47 included in the analysis)	score (-2: least … +2: most) -2 -1 0 +1 +2
In case of cough	
C1. Frail health status	
C2. I fear some complications	
C3. Presence of sputum coloured	
C4. Unknown patient asking for an antibiotic	
C5. I cannot get a rapid X-ray or other diagnostic tool	
In case of sore throat	
D1. Frail health status	
D2. Second consultation for the same problem	
D3. Patient leaving soon for holidays	
D4. Patient is a young child	
D5. Patient must work	
D6. Unknown patient asking for an antibiotic	
D7. I may use alternative treatments	
D8. Length of symptoms ≤ 2 days	

➔ frail status, fear of complications, coloured sputum (for cough), 2d consultation, patient leaving or in need to work, demand of patient, and pediatric patients are major determinants [C1-C3; D1-D5]
➔ lack of diagnostic and patient demand are less important but only short duration symptoms duration reduced antibiotic prescription

Conclusions

This study confirms that issuance of guidelines by Public Authorities to reduce antibiotic overprescription by GP's is ill-efficient in a fee-for-service country (Belgium) because of (i) distrust towards those guidelines (considered too restrictive, often outdated, and largely based on financial considerations); (b) fear of putting patients at risk (frail patient) or not to meet her/his demand; (d) lack of perception of bacterial resistance in daily practice.

Correcting for antibiotic overprescription in countries with high consumption of antibiotics will require more comprehensive approaches than those used so far.