

Knowledge and risk perception of measles and factors associated with vaccination decisions in subjects consulting university affiliated public hospitals in Lyon, France, after measles infection

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Introduction

Europe is still far from a vaccine coverage rate of 95%, necessary to eliminate measles. In 2011, outbreaks were reported by 36 of 56 European Union member countries, with France accounting for more than half of cases. The Rhône-Alpes region, located in south-east France and bordering Italy and Switzerland was one of the most affected French areas during the 2011 epidemic. We have determined previously that, during the Rhône-Alpes region outbreak, 78% of patients were not vaccinated, and 18% had received only 1 vaccine dose¹. We therefore investigated the reasons for non-vaccination and perception by conducting a retrospective epidemiological study. The study objectives were: i) to assess knowledge of the study population on measles and its consequences for patients and their families; ii) to evaluate measles vaccination awareness and practices; and iii) to gauge potential changes in opinion with regard to measles vaccination after disease onset. The study was supported by a grant from "Institut National de Prévention et d'Education pour la Santé" (INPES)..

Table 1: Reasons for non-vaccination and changes towards a positive opinion regarding vaccination after measles infection

Reasons for not being vaccinated	Total number	Positive opinion after measles N (%)	Reasons for not being vaccinated	Total number	Positive opinion after measles N (%)
Children (n=61)			Adult cases (n=41)		
Inappropriate age	21	5 (23.8)	No reasons	12	6 (50)
Medical contradictions	15	3 (20.0)	Parent refusal	10	NA*
Parent refusal	14	2 (14.3)	Measles antecedents	6	2 (33.3)
Measles antecedents	2	0	Thought they were vaccinated	5	2 (40)
Parents did know the risks	3	2 (66.6)	Medical contradictions	4	2 (50)
Others	6	2 (33.3)	Others	4	3 (75)

References

1. Huoi C, et al. A report on the large measles outbreak in Lyon, France, 2010 to 2011. Euro Surveill 2012; 17(36):20264.

Materials and Methods

Our retrospective study was designed to collect comprehensive data on adults and parents of children consulting 1 of 4 university-affiliated public hospitals in Lyon, France between January 1, 2010 and September 2012 because of measles infection. Only cases with a laboratory confirmed diagnosis of measles were eligible to participate. Information on demographic variable, the extent of knowledge of measles, its mode of transmission, associated risks and consequences for patients and their families was obtained by using a questionnaire-based, structured telephone interview.

Results

Of the 473 measles cases diagnosed between 2010 and 2012, 148 accepted to participate, giving a response rate of 31.29%. Children less than 18 years of age accounted for 58% of the study population. Overall, 73.64% of patients were not vaccinated or partially vaccinated. The reasons for non-vaccination and changes in opinion after measles infection are presented in Table 1. In total, 29.1% of the responding parents and 24.2% of adult cases were opposed to vaccination "in principle". Only 30.2% of parents and 12.8% of adults considered measles to be potentially "serious" before disease onset and a large majority were unaware of its complications. In total 26.7% of parents and 43.5% of adult cases confirmed that their opinion regarding vaccination became more positive after measles infection. Among parents of infected children, knowledge of transmission and perceived severity of were independently associated with a more positive opinion about measles vaccination after disease onset. In adult patients, low education level and lack of knowledge of sequelae were linked with a more positive opinion (Table 2).

Table 2: Factors associated with a more positive opinion after measles infection

Variable	OR (95%CI)	p
Parents of infected children		
knowledge of transmission mode	5.9 (1.64-21.26)	0.007
perceived severity of measles	1.5 (1.06-2.13)	0.02
Adult cases		
Low education level	3.39 (1.03-11.11)	0.04
Lack of knowledge of sequelae	10.19 (1.14-91.31)	0.03

Conclusions

These findings suggest the need to organize information and prevention campaigns in at-risk populations. Individuals affected by vaccine-preventable diseases are interesting populations to study disease impact on vaccine perception.