Acceptability of New RSV Preventive Tools to Parents and Healthcare Workers

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Abstract

In view of new RSV prevention strategies, we conducted a multicenter opinion survey among parents and antenatal caregivers in Brussels between August and November 2023. Awareness of RSV was initially low, but parental acceptance to universal RSV prevention increased up to 89% after additional information on RSV burden was provided. 86% of gynecologists and 66% of midwives considered RSV prevention necessary for all infants regardless of the presence of comorbidity. The Covid-19 pandemic reduced the confidence of 24% of parents in vaccination.

Introduction

Although it almost disappeared during the Covid-19 pandemic, respiratory syncytial virus (RSV) is now resurging in many countries, leading to a high burden of disease within the pediatric population (1, 2). After years of research, new anti-RSV preventive tools, i.e., a vaccine for pregnant women and extended half-life monoclonal antibodies, are entering the market and raising high expectations among the pediatric community (3).

Many valuable prevention strategies could be imagined using either tool, alone or in combination, in a year-round or seasonal program (4, 5). Whereas cost-effectiveness analysis is ongoing in many countries to guide their recommendations, we decided to investigate another key feature of prevention success: the acceptability of a new RSV preventive action to parents. Therefore, we conducted a multicenter opinion survey among parents in the cosmopolitan city of Brussels and further assessed the support that might be expected from their healthcare workers (HCWs) involved in antenatal cares – i.e., gynecologists and midwives- to promote RSV prevention beside pediatricians.

Methods

The study was conducted over a four-month period (August-November 2023) preceding the release of recommendations by the Belgian National Immunization Technical Advisory Group (BNITAG) on RSV prevention in children and the introduction of new anti-RSV preventive products in Belgium.

All mothers expecting a baby or having just delivered and their partners were invited to participate. Recruitment was done during out-patient prenatal visits and maternity ward stays in three hospitals of the Chirec network, located in distant neighborhoods of the Brussels and Walloon Brabant regions and gathering different socio-economic and ethnic populations.

Parents were invited to complete a multiple-choice questionnaire through an online platform, and, in the middle of the survey, to read some information about RSV disease and its new prevention tools. Login could be done via a QR code on a paper folder or on a social media. HCWs were recruited through hospital networks and invited to complete another specific questionnaire on the same platform. Questionnaires are displayed as Supplemental Digital Content 1 and 2[1].

Differences between groups were assessed by Chi-square test using GraphPad Prism Software; a two-tailed p-value of <0.05 was considered as statistically significant.

Data collection was strictly anonymous. The study has been approved by the Ethics Committee of the Chirec Network and was GDPR compliant.

Results

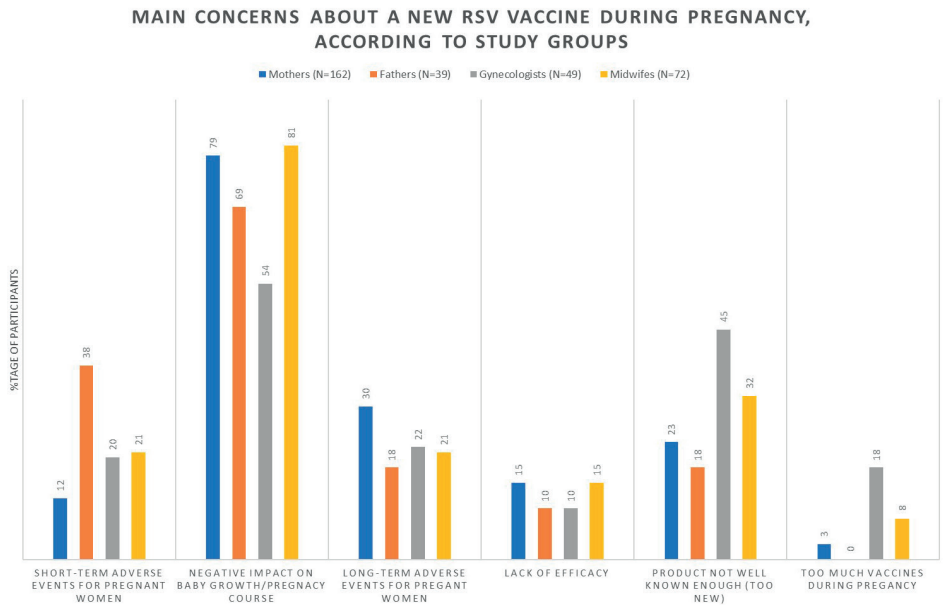
Two hundred and sixty-eight parents (223 women, 45 men) participated in the survey, 82% of whom completed the entire questionnaire. Ninety percent had already heard about bronchiolitis, but less than half knew that it was related to a virus called RSV. Nearly 40% remembered a relative who already suffered from bronchiolitis, and who had been hospitalized in half of the cases (20% of the total). Ninety-three percent of the participants already applied the Belgian national immunization program for their children or intended to do so.

Sixty-nine percent of the parents were at first glance in favor of adopting a new preventive measure against RSV for every otherwise healthy infant, while 6% would leave it to those with comorbidity and 25% were against or doubtful. After reading a short informative document about the RSV burden and the existence of new preventive tools, the proportion of parents in favor of universal prevention increased up to 89%, with 11% remaining against (5%) or hesitant (6%) ($X^2=17,5$; $p<0.001$). This trend was observed similarly among mothers and fathers.

When asked about a hypothetical preference between a maternal vaccine or an antibody administered to the baby, 36% chose the vaccine, 17% chose the antibodies and 35% answered it didn't matter as long as it will be included in the national immunization program or recommended by their HCWs. Parents' main theoretical concerns about a new maternal vaccine are illustrated in Figure 1. The possibility of co-administration with other antenatal vaccinations to avoid extra-visit was not deemed mandatory for 60% of parents. Finally, 40% of the cohort

1. Digital content can be accessed through the journal's website (https://www.belgjpaediatrics.com/index.php/bjp) or by searching the article in Google Scholar (https://scholar.google.com/).

Figure 2: Main concerns about a new RSV vaccine during pregnancy, according to study groups.



Choices were not mutually exclusive. Results are expressed as percentage of positive answer inside each subgroup.

declared that the COVID-19 pandemic had influenced their attitude towards vaccination, and this influence was considered negative for 24% of participants, more often among mothers than fathers (OR 3,39, 95%CI [1.14-10.07], p<0.05).

Furthermore, 128 HCWs (1/3 gynecologists and 2/3 midwives) participated to the opinion survey, of whom 90% declared to apply the BNITAG recommendations in their family environment. Ninety-eight percent were aware of bronchiolitis and 48% knew a close relative who suffered from RSV disease. Seventy-four percent of HCWs, of whom significantly more gynecologists than midwives (86% vs 66%, OR=2.74, 95%CI [1.13-6.68], p<0.05), considered RSV prevention as a need for every infant regardless of the presence of any comorbidity. However, 16% thought it should be limited to high-risk groups and 10% of the cohort considered it useless. Among HCWs in favor of prevention, 42% would prefer the principle of a maternal vaccine over monoclonal antibodies given to babies, whereas for 41% of them, there would be no preference if both are equally recommended. Only half of the cohort were aware of a new maternal RSV vaccine that will be soon in Europe and 80% would like to receive more information about vaccination during pregnancy. Forty-five percent of the cohort (65% of gynecologists, 31% of midwives (OR=4, 95%CI [1.86-8.59], p<0.001) agreed to prescribe a new RSV vaccine if advised by the BNITAG. However, a further 42% would only use it under certain conditions (8% possible co-administration with other vaccines, 10% reimbursement by authorities, 24% similar recommendations from other countries) whereas 12% declined the option. Figure 1 displays the main concerns of our cohort of HCWs regarding a hypothetical new RSV vaccine. Concerning the antenatal immunization program already implemented in our country, dTPa-, influenza- and Covid-19-vaccines were recommended by 91%, 56% and 36% of midwives, respectively, and by 98%, 94% and 80% of gynecologists, respectively, (X^2=103, p<0.001). Finally, while 31% of midwives reported that the Covid-19 pandemic had had a negative impact on their attitudes toward vaccination, the opposite was true for 38% of gynecologists, who reported a favorable impact.

Discussion

Despite its very high threat to infants worldwide, there has been so far no preventive measure available against RSV, except for passive immunization with palivizumab restricted to high-risk groups (1, 2). Since experts agree that every infant deserves protection against such a virus, regardless of the presence of any comorbidity, the two new anti-RSV preventive tools entering the market are in the spotlight (3, 5). Under the current knowledge, it remains difficult for experts to recommend one tool over another based on efficacy and safety data only (4, 5). We therefore investigated a cornerstone of prevention success: acceptability to parents of a new anti-RSV preventive measure, which seemed to us to be of paramount importance in our post-pandemic era of increasing vaccine hesitancy (6).

Fortunately, we showed that a preventive strategy against RSV seemed relatively well accepted by parents and caregivers, whatever the tool -vaccine or antibodies- chosen. Almost all parents knew about bronchiolitis and many recalled a serious case in their family; however, much fewer were aware that this condition is caused by a virus called RSV, which is potentially preventable through immunization. The importance of thorough information during immunization campaigns, describing not only the benefits/risks of the product itself but also the burden of the targeted disease, was supported by the impact that our informative document had on patients' opinion. A similar observation has been reported in a previous study assessing parental hesitancy regarding monoclonal antibodies in eight countries (7). However, in this study, "anti-vax" people (i.e., refusing their national immunization program) were excluded from enrollment, whereas we decided to retain vaccine hesitant subjects to better mirror the real setting in which prevention should be implemented. Moreover, even in a population with low rate of vaccine hesitancy, a proactive educational campaign preceding implementation of a new immunization program is of utmost importance. This concept has been highlighted by the successful approach of Galician colleagues, who already reported very high uptake after 3 weeks of a hospital-based nirsevimab administration program (8).

The belief of HCWs in the benefits of vaccination as well as the insertion of a new action in the regular national schedule have both been suggested as key factors to reinforce parental adherence (7). Our results confirmed these findings and also underlined the influence of similar recommendations from neighboring countries on HCWs' opinions. Conversely, co-administration with other vaccines to limit extra visits was not deemed necessary by either parents or HCWs. This observation was reassuring since this possibility of co-administration is often not available at the beginning of a vaccine program (due to lack of data) and since several other maternal vaccines are under development (9).

Furthermore, our results were in line with those from a previous pre-pandemic trial from the United Kingdom showing that vaccine hesitancy was significantly higher among midwives than gynecologists (10). Whether looking at the new RSV vaccine or the other vaccines recommended during pregnancy, our study confirmed that this difference remained after the COVID-19 pandemic, which for 31% of midwives was deemed as a source of loss in vaccine confidence. The reasons why midwives are more reluctant to adopt immunization programs have not been explored in this study but should be further investigated. In Belgium as in many other European countries, midwives play a key role in antenatal and postnatal care and their impact on patient adherence to vaccination recommendations has been reported (7, 10).

A major limitation of our study was that although it was conducted in three different socioeconomic neighborhoods, we could not ascertain the representativity of the general Belgian population through our study cohort. No question regarding educational/economic level was asked to avoid stigmatization and discouragement. Moreover, as participation was voluntary, we could not determine the participation rate among parents who received the folder or saw the call on social media. Finally, our survey was conducted only in the Brussels region, where the lowest compliance with the antenatal vaccination program has been registered compared to Flanders and Wallonia (11).

Conclusion

Our study was encouraging in that it showed an overall enthusiasm toward new preventive actions against RSV. We also highlighted how information about the targeted disease itself is crucial to ensure the success of vaccination campaigns by increasing parental awareness and, thereby, acceptance. Considering the rise of anti-vax waves in our post-pandemic era, new communication tools should be investigated to promote patient and HCWs adherence to immunization programs during pregnancy and early childhood.

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Statements and declarations

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