

Original Research Article

Knowledge, attitude, and practice of care providers about congenital rubella syndrome

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ABSTRACT

Background: Behaviour of healthcare providers when facing an illness is an important part of their struggle. The aim of this study was to assess the level of knowledge, the attitude and the practice of health care providers regarding to the Congenital Rubella Syndrome.

Methods: Authors did a descriptive study on the knowledge, the attitude and the practice of healthcare providers about Congenital Rubella Syndrome with 161 healthcare providers working in 8 hospitals in Madagascar. A self-introduced survey was used to collect the data.

Results: There were 87% of all healthcare providers included in the study, who said that rubella in the first trimester of pregnancy was the cause of this syndrome for child, 87% knew at least 2 of the 3 major signs of Congenital Rubella Syndrome and more than 80% had a good knowledge of the criteria for diagnosing cases (suspected, clinically confirmed, laboratory confirmed). The referral to a hospital or to a specialist was the most proposed for the management of the case of Congenital Rubella Syndrome. The prescription of an IgG avidity for rubella and advising abortion were the main propositions for mothers having a positive test at the first trimester of pregnancy.

Conclusions: A fairly satisfactory level of knowledge of healthcare providers was noted.

Keywords: Behaviour, Congenital rubella syndrome, Healthcare provider, Madagascar

INTRODUCTION

Rubella is a highly contagious second-childhood disease, but usually mild and harmless in most cases. However, a maternal infection during the first trimester of pregnancy can cause a fetal malformation syndrome called Congenital Rubella Syndrome (CRS).^{1,2} Global, data on CRS remains scarce and this lack of information leads to an underestimation of its magnitude.³ In developed

countries with biological diagnostic facilities like Canada, almost all cases of CRS are reported due to the existence of an Active Immunization Monitoring Program which includes a hospital network.⁴ For this country, nine cases of CRS are listed from 1996 to 2004, but the incidence of abortions and stillbirths linked to rubella is not known.⁵ Vaccination remains the only relevant solution to eliminate and eradicate rubella as well as the related malformation pathologies. The

elimination of rubella and CRS was verified in America WHO Region in 2015 as well as in several countries in the European Region.⁶ There is no current regional goal for rubella/CRS elimination for WHO African region.⁷

Knowledge, attitude and practice of healthcare providers regarding CRS are important elements in the fight against rubella. However, the literature remains less silent on this subject. Insufficient knowledge of healthcare providers implies poor notification of cases as well as inadequate management. There is a real need to have an idea of the behavior of providers towards the disease. Thus, the objective of the study was to assess the level of knowledge, the attitude and the practice of healthcare providers in CRS.

METHODS

Study site

A descriptive study on the knowledge, the attitude and the practice of healthcare providers towards CRS was carried out in eight centers: five University Hospital Centers in Antananarivo, the capital of Madagascar, one University Hospital Centers in the south part of the country and two private Hospital Centers in Madagascar. The study was conducted in May and June 2019. The study was focused more specifically in the pediatric, the oto-rhino-laryngology and the ophthalmology department of these hospitals. These departments mainly provided care for CRS cases.

Study population

Study population was made up of healthcare providers who worked at the study sites during data collection. All general practitioner or specialist and interns working in the 3 departments (pediatric, otolaryngology and ophthalmology) were included in the study, regardless of age, gender and year of service. Healthcare providers who were on leave during data collection and those who did not give their consent to participate are excluded from the study.

Data collection

A self-introduction survey was used to collect the data. Each participant received a pre-tested questionnaire to fill out. The information collected were knowledge or attitude/practice about CRS: etiology, three major signs (ocular, cardiac and hearing), diagnosis (suspected case, clinically confirmed case and laboratory confirmed case), management of both CRS case and pregnant woman tested positive for specific rubella IgM during the first trimester of pregnancy and prevention.

Data analysis

Data entry and analysis was done with Epi Info 7.2 software (CDC Atlanta). Proportion was the statistical

measure used to describe knowledge, attitude and practice of the healthcare providers.

The study has been approved by the Malagasy Ministry of Health's Ethics Committee. Participation in the study was voluntary, so the consent of each participant was requested after explaining the objectives and the course of the survey and its anonymity.

RESULTS

A total of 161 healthcare providers participated to the study: shared as following categories interns (62%), general practitioners (18%), pediatrician (5%) and others specialist. The exercise period in the service ranged from 0 to 360 months with an estimated median duration of 3 months.

Causes of SRC

Most healthcare providers (85%) were aware of the difference between rubella and CRS and 87% said that women affected by rubella in the first trimester of pregnancy will have a child with CRS. Only one provider did not know the pathogen responsible for CRS (rubella virus).

Signs of SRC

The three major syndromes of CRS were: eye damage, heart damage and hearing loss. The proportion of healthcare providers who knew these three syndromes were estimated respectively of 96%, 83% and 85%. Figure 1 shows the knowledge about these 3 major syndromes depending on the provider. In fact, 87% of healthcare providers knew at least 2 of the 3 major signs of CRS and there was no difference between internal interns and other providers.

Diagnostics of CRS

According to 66% of healthcare providers, CRS could be diagnosed up to the age of 1 year and up to the age of 5 for 17%. Figure 2 presents providers' knowledge of CRS diagnostic elements. In general, more than 80% of healthcare providers had a good knowledge of the diagnostic criteria for the suspected case, the clinically confirmed case and the laboratory confirmed case.

Management of CRS

Among the 161 healthcare providers, 23(14%) have already seen a case of CRS. Only 7(4%) healthcare providers reported having diagnosed a case of rubella. The procedure followed by these 7 providers were: referral to a specialist (n=4), mother's vaccination (n=1), child's vaccination (n=1) and cataract surgery (n=1).

For healthcare providers who have not yet diagnosed a case of rubella (n=154), they proposed the following

actions: referral to an hospital or to a specialist (42%), carrying out additional examinations to confirm the diagnosis (19%), declaration or notification of the disease (8%), declaration and referral to a specialist (9%) and treatment (10%).

Figure 3 shows the attitude of providers towards a pregnant woman who tested positive for specific rubella IgM during the first trimester of pregnancy. Then, 39% prescribe the IgG rubella avidity test and 35% of providers advise abortion.

Prevention of SRC

Vaccination represented the prevention most cited by providers (92.5%), followed by rubella treatment during pregnancy (9.3%).

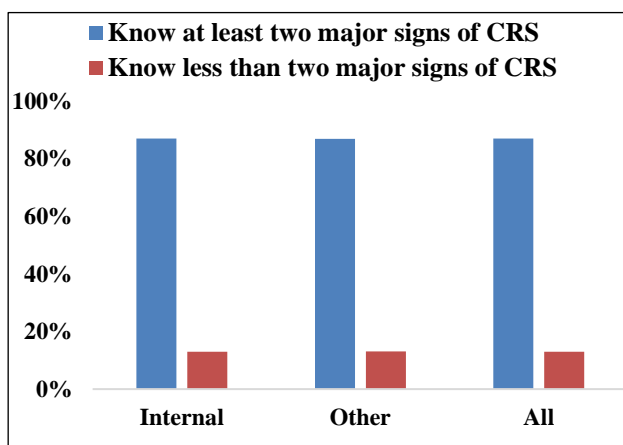
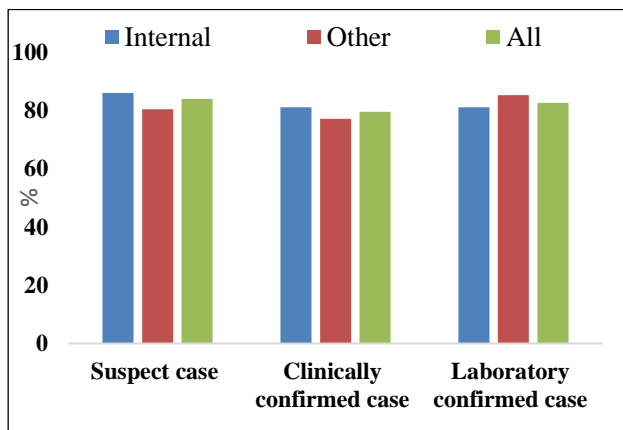


Figure 1: Proportion of providers according to the knowledge of the major signs of congenital rubella syndrome (heart disease, eye damage, hearing loss).



Suspect case: mother with a history of suspected or confirmed rubella during pregnancy even without clinical signs of CRS
 Clinically confirmed case: at least two major signs detected
 Laboratory confirmed case: suspected case with positive IgM specific rubella blood test

Figure 2: Proportion of providers who knew the Congenital Rubella Syndrome, diagnostic criteria.

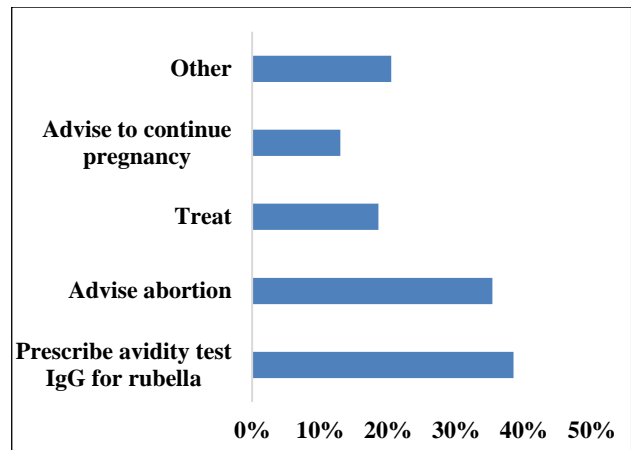


Figure 3: Proportion of providers according to their attitude towards a pregnant woman having a positive test for specific rubella IgM at the first trimester of pregnancy.

DISCUSSION

Internal trainees represented almost two-thirds (62%) of the healthcare providers included in the study. Generally, their internship in a service lasts 3 months and this duration has an influence on the median duration of exercise for providers studied (3 months). The results of the knowledge, the attitudes and the practices of health care providers could also be influenced by those of internal medical trainees. Being in training, internal trainees (students) may have better knowledge. On the other hand, the other providers (in professional practice) could have a good attitude and practice because of their professional experiences, and more specifically the pediatricians who represented 5% of the participants.

Generally, healthcare providers' knowledge of the causes and clinical signs of CRS appeared to be better and there was no difference between internal trainees (students) and other providers (in professional practice). Results showed that 87% of providers said that rubella in the first trimester of pregnancy caused CRS, and 87% knew at least two major signs of CRS (Figure 1). The major signs including the ocular, cardiac and auditory signs were often the most known by the care provider because of their frequency and these noisy manifestations in CRS.^{8,9} This knowledge can lead health care providers to think immediately towards CRS diagnosis and thus avoid a potential case of CRS escaping them. However, the rubella etiology often remains insufficiently exploited or known by the healthcare providers. It should be noted that there is a considerable proportion of healthcare providers (more than 10%) who have little knowledge of CRS.

There was a good level of providers' ability to diagnose CRS. Two-thirds of health care providers (66%) said that CRS could be diagnosed until the age of 1 year and almost 80% were aware of the elements allowing to

identify CRS suspected cases, clinically confirmed cases and laboratory confirmed cases (Figure 2). The first year is the best moment to diagnose CRS. The WHO classification for CRS is still little known, but the existence of malformation signs often leads the healthcare professional to think of the rubella etiology because of their frequent occurrences.^{8,10,11} Thus, the context of maternal rubella serology which defines the suspect case, the malformation signs (ocular, cardiac and auditory) which confirm the clinical case of CRS and the laboratory confirmation are well known by healthcare providers. The etiological diagnosis is often delayed due to the absence or difficulty of accessing the test.⁹

Regarding management and according to the results of this study, the referral to a specialist was the first attitude or practice (for those who have already managed a case of CRS) adopted by most of the healthcare providers before a CRS case. The reflex of healthcare providers is appropriate, because early management by referral in a specialized environment improves the prognosis and the outcome of malformation pathologies such as cataracts.¹² The results of the study did not allow a real evaluation of the practice of health providers because almost of them have not yet managed a case of CRS.

Regarding the attitude of providers towards a pregnant woman having a positive test for IgM rubella-specific at the first trimester of pregnancy, 39% prescribed the IgG rubella avidity test and 35% recommended abortion. The attitude of healthcare providers seemed to be appropriate to the situation. In an environment where contact with the infectious agent can be frequent, avidity tests must be carried out to guide the behavior to be followed.¹³ The IgG avidity test remains an essential orientation element despite the difficulty of access to this test for Madagascar. The question of therapeutic abortion depends on the result of this IgG avidity test. It should be mentioned that in Madagascar, any form of abortion, even therapeutic, is prohibited.

The prevention of CRS by vaccination against rubella is very well known by healthcare providers. The introduction of the rubella vaccine into the routine immunization schedule is essential for reducing the burden of morbidity and mortality due to this disease.¹⁴ The fight against CRS requires a multidisciplinary team which provides the preventive and curative components.¹⁵

The behavior of healthcare providers is one of the factors that determine the quality of the care they provide. This study found a fairly satisfactory level of knowledge about CRS for healthcare providers. To reduce the incidence of CRS, disease burden, disability and malformation complications, some healthcare providers need to update their knowledge of CRS. Health facilities at the peripheral level are the first contacts of the population in case of illness, it is necessary to have an idea of behavior about the CRS for their healthcare providers.

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Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee of Malagasy Ministry of Health

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