Immunological Profile of Children Aged 5 To 15 in the Health District of Ouahigouya after Introduction of the Menafrivac® Vaccine in 2010 in Burkina Faso

•Mahamoudou Sanou1, 2*, Mariam Ouedraogo1, 2, Issa Tonde1, 2, MamadouTamboura1, 2 , Absatou Ba /Ky1, Paul Kristiansen4, Lisbeth M. Naess4, Abdoul Salam Ouedraogo3,Dominique Caugant 4, Rasmata Traore1,2

•1University Joseph KI - ZERBO, Ouagadougou, Burkina Faso
•2Pediatric University Hospital Charles De Gaulle (CHUP-CDG), Ouagadougou, Burkina Faso
•3University Hospital Souro Sanou (CHU SS), Bobo Dioulasso, Burkina Faso
•4Norwegian Institute of Public Health (NIPH), Oslo, Norway

INTRODUCTION

Due to their severity and frequency, meningitis is a major public health concern in developing countries, particularly in the African meningitis belt.

Our study consisted of studying the immunological profile of children aged 5 to 15 in eight villages in the Ouahigouya health district in Burkina Faso.

METHODOLOGIE

It was a prospective study for descriptive purposes of the immunological profile of children aged 5 to 15 in the Ouahigouya health district. Saliva samples were taken in 2017 and 2018, stored in aliquots then sent in 2019 to OSLO for the titration of IgA and IgG antibodies directed against serogroups A, C, W and Y of Neisseria meningitidis. The ELISA technique, the principle of which is based on the assay in multiplex microspheres, was used as a method for the quantification of the antibodies. Data were analyzed using Microsoft office Excel 2019 software, SPSS 20.0, and MedCalc14.8.1 software.. software

RESULTATS

Caractéristics	immunization status		
	Vaccinated	Not vaccinated	Unknown
Sex	n(%)	n(%)	n(%)
Male	49 (80,3)	11(18,1)	1(1,6)
Female	55(80,9)	13(19,1)	0
Age groups			
5 à 10 years	58 (75,3)	18(23,4)	1(1,3)
11à 15 years	**46 (88,5)**	6(11,5)	0
Occupation			
Students	**69(83,1)**	13(15,7)	1(1,2)
Unknown	35(76,1)	11(23,9)	0
Total	**104(80,6)**	24(18,6)	1(0,8)

The average age of the 129 children in our studywas 9.8 years an here was a predominance of women (52.7%).

The majority of children in the Ouahigouya health district (80.6%) had been vaccinated by MenAfriVac Meningococcal antibody titration was performed on the entire study population without distinction of vaccination status.

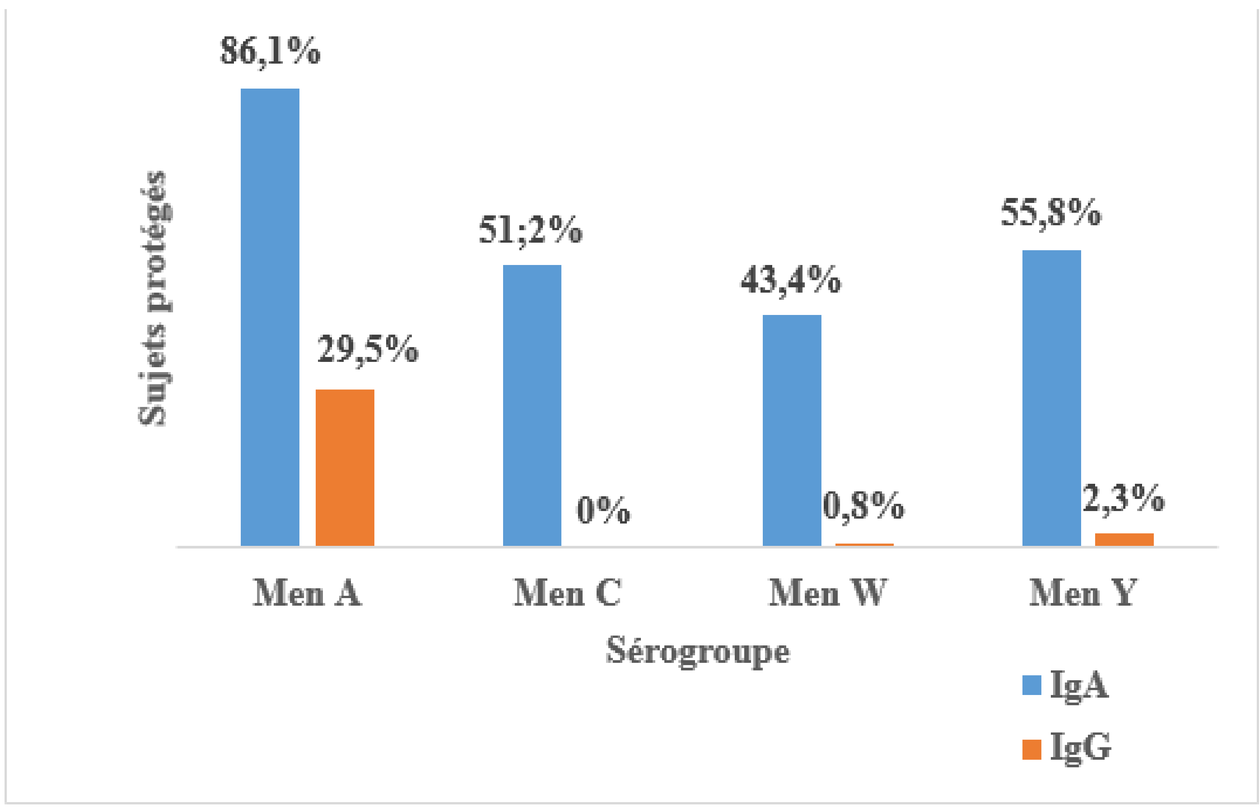

Fig: Distribution of protected subjects by serogroup

The number of children whose IgA or IgG salivary antibody titer correlated with protection (≥4 ng / mL) was greater for meningococcus A, 111 (86.1%) and 38 (29.5%).

Previous studies have also shown that meningococcal conjugate vaccines are able to induce protective salivary IgA and IgG antibodies

This conjugate vaccine, in addition to protecting against meningococcus serogroup A, would induce the production of protective IgA and IgG antibodies against serogroups C, W and Y.

CONCLUSION

- **After seven years of vaccination, it seems that vaccine protection is relatively strong, i.e. 97%, 56.1%, 60.6% and 66.7% respectively for serogroups A, C, Y and W.**
- **A study in larger scale would be desirable to confirm this conclusion**.

•**Keywords**: MenAfriVac, Neisseria meningitides, Antibodies, Immunity, Burkina Faso

contact : mahamoudsanou@hotmail.com 226 702679 06