ISSN: 2573-9573

Research Article

Journal of Ophthalmology & Clinical Research

Attitudes and Practices in the Prevention of Purulent Ophthalmia Neonatal in Senegalese Hospital

Gueye Modou, Boiro Djibril, SOW Amadou*, Dione Cheikh Amara, Aly Mbara Ka, Ndongo Aliou Abdoulaye, Dieye Sofiatou, SOW Papa Souley, Faye Papa Moctar and **Ndiaye Ousmane**

1-Centre Hospitalier Universitaire de Dakar, Sénégal

***Corresponding author**
SOW Amadou, 1-Centre Hospitalier Universitaire de Dakar, Sénégal, Tel: +22177 269 01 11

Submitted: 12 Jun 2020; **Accepted**: 17 Jun 2020; **Published**: 24 Jun 2020

Abstract

Introduction: *Ophthalmia or neonatal conjunctivitis is a major public health problem in developing countries. Recommendations have been issued by the World Health Organization (WHO) and the Ministry of Health of Senegal for the prevention of this scourge. The objective of the work was to assess the level of knowledge and practice of these recommendations by health workers.*

Methodology: *This was a multicenter, prospective study conducted from March 1st to June 30th, 2013 in nine (9) health structures at the four (4) districts of Dakar. All agents who performed care at birth were included.*

Results: *We interviewed 108 health care workers in the nine targeted structures. More than half of the respondents (54.6%) interviewed were in a maternity ward with midwives (41.7%) who were clearly in the majority. As far as knowledge is concerned, the practice of neonatal eye care was systematic for 88% of the nursing staff at birth. Regarding attitudes and practices, the majority of caregivers cleaned (67.6%) the eyes before instillation of eye drops. More than eighty-four percent (84.3%) of the caregivers surveyed routinely practiced eye care in the newborn at birth. The majority of the agents prescribed Rifamycin (47.2%) as a single dose in each eye. Paediatricians recommended one day of treatment while midwives and general practitioners recommended 7 days.*

Conclusion: *Overall, the recommendations are not well implemented by caregivers. It would then be necessary to improve the level of information for harmonization and application of the recommendations.*

Keywords: Ophthalmia, Neonatal, Rifamycin, Eye drops, Dakar

Introduction

In developed countries, neonatal conjunctivitis has become rare and benign with the strengthening of hygiene measures and the systematization of preventive methods. In contrast, in economically depressed countries, where hygiene and prophylaxis are inadequate, neonatal conjunctivitis remains a threat to newborns [1,2]. Apart from Neisseria gonorrhae and Chlamydia trachomatis, it should be noted that non-sexually transmitted bacteria, such as *staphylococci, streptococci, Haemophilus* and other gram-negative bacterial species, account for 30% to 50% of all cases. neonatal ophthalmia [3]. Thus, in the absence of preventive measures, purulent ophthalmia, especially gonococcal, can progress rapidly towards serious complications such as corneal perforation, blindness or even death [4]. In Senegal, to avoid neonatal ophthalmia, the Ministry of Health recommends treating the eyes of each newborn with a single dose of antibiotic or antiseptic medication, within the first hour after birth. Before eye care, it is advisable to remove gloves, wash hands again with soap and water and wipe hands with a clean towel [5]. The purpose of our work was to assess the level of knowledge and practice of this recommendation by the staff involved in the care of the newborn.

Methodology

Description of the sanitary pyramid of Senegal

In Senegal, the health system is in pyramidal form with a division of the national territory into the Sanitary District with several health centers. The districts are grouped in medical region which is the administrative center of the health region, they supervise the districts. In addition, there are regional hospitals which are the reference structures for patients coming from health centers. The university hospital centers (CHU) correspond to the last institutions of appeal for the previous levels.

Our study was conducted at the level of health facilities in the Dakar department, which is subdivided into four (4) health districts divided into health centers and university and non-university hospitals. The choice of sites was random based on a random draw by drawing a sample frame in alphabetical order; This allowed us to conduct our

survey in the selected centers taking into account the existence of a functional maternity and / or neonatology unit. In the different districts we have selected six (6) health centers. Regarding hospital structures, we selected three (3). This was a multi-center survey of skills, knowledge and practice (KAP) of health care providers in targeted facilities. It took place from March 1, 2013 to June 30, 2013. The study population consisted of caregivers involved in the immediate care of the newborn at birth including pediatricians, obstetricians, midwives, nurses in the room of birth, as well as general practitioners in the birth room. The data was collected using a questionnaire previously tested and validated by our team. This was a questionnaire in the form of open and closed questions on the assessment of knowledge and practices of eye care for the newborn at birth. Practices were collected directly in the birth room or from prescriptions prescribed by practitioners during the stay or discharge of patients. The collection of data was done in confidentiality. The data was captured and analyzed using SPSS software version 17.0.

Results

We interviewed 108 health care workers in the pediatric, Gynecology-Obstetrics and Neonatal departments in the nine targeted structures. More than half of the providers (54.6%) interviewed were in a maternity ward with midwives (41.7%) who were clearly in the majority (Table 1). In terms of knowledge, the practice of neonatal eye care was systematic for 88% of the nursing staff at birth and the majority of providers (95.4%) advocated eye care at birth to prevent eye infections. whatever their profile. Poor childbirth conditions (48.4%) in the structures were the main reason for systematic eye care practice according to the caregivers interviewed. The Chlamydia-Gonococcus couple was, according to the caregivers, the most frequently involved germs (38%) followed by the Streptococcus-Staphylococcus couple. The most common medication prescribed by practitioners was Rifamycin eye drops (47.2%) (Table 2). Regarding attitudes and practices, the majority of caregivers cleaned (67.6%) the eyes before instillation of eye drops. More than eighty-four percent (84.3%) of the caregivers surveyed routinely practiced eye care in the newborn at birth. The majority of the agents prescribed Rifamycin (47.2%) as a single dose in each eye (37.1%) or twice daily (39.8%) (Table 3). The single dose was prescribed by all pediatricians and nurses in the birth room. While midwives and gynecologists / obstetricians recommended two daily instillations (Table 4). Regarding the duration of treatment, 65.6% of caregivers prescribed 7 days of treatment, and 25% of them took just one day. Paediatricians recommended one day of treatment while midwives and general practitioners recommended 7 days.

Table 1: Characteristics of the nursing staff

Characteristics	Number (n=108)	Percentage (%)
Type of structure		
Maternity	57	54,6
Neonatal Service	21	17,6
Pediatric Service	30	27,8
Medical staff profil		
Midwives	45	41,7
Nurses	24	22,2
General Practitioners	17	15,5
Pediatricians	16	14,8
Gynecologists	6	5,8

Table 2: Caregiver distributions according to their knowledge of eye care

Knowledge about Eye care	Number	%
Indications for eyes care		
Systématics	95	88,0
Not systématic	13	12,0
Rational for eye care		
Prévention of eye infections	103	95,4
Treatement of eye infection	3	2,8
Other	2	1,8
Justification of systematization of eye care		
Protocol	15	15,8
High infectious Risk	3	3,2
Poor childbirth conditions	46	48,4
Other	31	32,6
Germs involved		
Streptococcus et Staphylococcus	34	31,5
Chlamydiae et Gonococcus	41	38,0
Don't Know	33	30,6
Drugs used		
Rifamycin	30	27,8
Gentamycin	24	22,2
Picloxidin	1	0,9
Hexamidine	1	0,9
Don't Know	52	48,1

Table 3: Caregiver distributions according to their eye care practices

Eye Care Practices	Number	Percentage
Cleaning the eyes before care		
Yes	74	68,5
No	21	19,4
Sometimes	13	12,1
Eye care at birth		
Never	2	2,8
Systematically	91	84,5
Sometimes	14	12,9
Prescribed drugs		
Rifamycin	51	47,2
Gentamycin	35	32,4
Picloxidine	11	10,1
Hexamidine	6	5,5
Other	5	4,8
Duration of treatment		
1 days	27	25,0
3 days	7	6,4
7 days	41	38,0
More than 7 days	33	30,6

Table 4: Distribution of caregivers by dosage

Posology	Function					Total
	Pediatrics	Gynecologist	Midwives	Nurses	General Practitioners	
1 single socket	12	1	13	15	1	42
1 socket x 2/day	2	5	22	3	11	43
1 socket x 3/day	0	0	10	5	2	17
Other	0	0	3	1	2	6
Total	14	6	48	24	16	108

Discussions

In Senegal, the Ministry of Health recommends treating each newborn's eyes with a single dose of antibiotic or antiseptic medication within the first hour after birth. In our survey, we noted that the majority of practitioners (84.3%), according to national guidelines, were applying routine birth prophylaxis to prevent possible purulent ophthalmia of the newborn in the first weeks of life. In most rich countries, this prophylaxis is becoming less and less systematic because of the significant decline in sexually transmitted infections. In Denmark, Norway, the United Kingdom and Sweden, it has been abandoned for several decades. According to a British study, this measure did not increase the rate of blindness attributable to gonococcal conjunctivitis of the newborn [1]. In countries and regions where the prevalence of sexually transmitted diseases remains high such as ours, ocular prophylaxis is considered to be a cost-effective intervention in the prevention of blindness and should therefore be systematic for all newborns. born. Silver nitrate prophylaxis against neonatal ophthalmia caused by Neisseria gonorrhoeae, first used by Credé in 1880, represented an important triumph of preventive medicine [4]. When it was adopted, it reduced the incidence of gonococcal ophthalmia from 10% to 0.3% [4]. Prophylaxis with this agent also slightly reduces the incidence of purulent conjunctivitis caused by other bacterial species [6,7]. However, silver nitrate is not perfect because it does not prevent all cases of gonococcal ophthalmia, and its failure rate is estimated at 0.063% [8]. It causes transient chemical conjunctivitis in more than 50% of infants, which some say hampers the creation of the bond of attachment between mother and infant [6,9,10]. There is a wide disparity in the products frequently used by practitioners in Dakar structures and eventually at the national level. Some eye drops used do not cover the two most feared germs: Neisseria and Chlamydia. In our study Rifamycin was the most prescribed eye drop by pediatricians, midwives and nurses from birthing rooms because of its effectiveness. In France, according to the recommendations of the French Agency for Health Safety of Health Products. (AFSSAPS), Rifamycin eye drops is used because it is active in vitro on the 2 targeted germs, has a Marketing Authorization (Marketing Authorization), and has indicated in the newborn [11]. In Canada, the Canadian Pediatric Society recommends that, as soon as possible after birth, all infants receive prophylactic erythromycin 0.5% to reduce the risk of neonatal ophthalmia. The use of this prophylaxis may also be beneficial in preventing ophthalmia caused by most of the germs involved [1]. Regarding the duration of treatment, the protocols of the WHO and the director of reproductive health in Senegal recommend a single dose of antiseptic or antibiotic in the birth room. It is recommended a single instillation in each eye on the first day, as soon as possible at birth [11]. This recommendation is followed by only one quarter of the staff surveyed.

Conclusion

Overall, the recommendations of the Ministry of Health and WHO are not very well implemented by our health workers. We note great disparities especially in the type of eye drops used, the modalities of its administration and the duration of the treatment. To overcome these shortcomings, it will be necessary: to harmonize the practices in all the services by respecting the dose and the duration of the prophylaxis, to train all the service providers of the department on the ocular prophylaxis of the neonatal conjunctivitis, to carry out bacteriological studies in order to determine the effectiveness of prophylaxis and routine screening (vaginal sampling) and treatment of all women with STIs. In addition, it would be important for us to determine the incidence of neonatal ophthalmia and the main pathogens involved in our structures.

References

1. Moore LD, MacDonald EN (2015) La prévention de la conjonctivite néonatale. Paediatr Child Health 20: 97-100.
2. Kokou V, Nidain M, Kassoula NB, Kwassi FA, Meba B, et al. (2016) Les conjonctivites néonatales dans le canton de Glidji au Sud du Togo: une étude transversale à propos de 159 nouveau-nés. PAMJ 24: 42.
3. Monebenimp F, Lokolo MS, Zoung AC, Tetanye E (2013) Efficacité de la Polyvidone Iodée à 2,5% dans la Prévention de l'Ophtalmie Néonatale Health Sci. Dis 14.
4. Forbes GB, Forbes GM (1971) Silver nitrate and the eye of the newborn –Credé's contribution to preventive medicine. Am J Dis Child 121: 1-4.
5. Soins essentiels du nouveau-né : manuel de base, Ministère de la sante et de laction sociale du Sénégal, février 2005.
6. Butterheld PM, Endh RN, Platt BB (1978) Effets du nitrate d'argent sur le comportement visuel initial. Am J Dis Child 132: 426.
7. Bell TA, Grayston JT, Krohn MA, Kronmal RA (1993) Randomized trial of silver nitrate, erythromycin and no eye prophylaxis for the prevention of conjunctivitis among newborns not at risk for gonococcalophthalmitis. Pediatrics 92: 755-760.
8. Rothenberg R (1979) Ophthalmia neonatorum due to *Neisseria gonorrhoeae*: Prevention and treatment. Sex Transm Dis 6: 187-191.

9. Davidson HH, Hill JH, Eastmann NJ (1951) Penicillin in the prophylaxis of ophthalmianeonatorum. J Am Med Assoc 145: 1052-1055.

10. Nishida H, Risenberg HM (1975) Silver nitrate ophthalmic solution and chemical conjunctivitis. Pediatrics 56: 368-373.

11. Agence Française de Sécurité Sanitaire des Produits de Santé (Affsaps): Prophylaxie des infections conjonctivales du nouveau né. J Pediatr Pueric 25: 126-129.