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A nationwide survey of prophylaxis against ophthalmia neonatorum in Turkey

Aim: To analyze the current practice of neonatal conjunctivitis (ophthalmia neonatorum) prophylaxis in Turkey.

Materials and methods: A standard questionnaire that collected information regarding the name and location of the clinical setting, the name and dosage of the medication used to prevent neonatal conjunctivitis (if there was any), and the department and preference concerning which health workers should administer the agent (gynecologist, pediatrician, or midwife) was prepared and administered to 24 university hospitals as well as to 24 registered community hospitals that had both pediatric and obstetric units.

Results: Neonatal conjunctivitis prophylaxis was administered by 58.3% of the respondents (university hospitals [66.7%] and community hospitals [50%]). The 2 most frequently used substances were gentamycin 18/28 (64.3%) and tobramycin 4/28 (8.3%). Other substances were tetracycline, silver nitrate, povidone-iodine, bacitracin + neomycin, and penicillin G.

Conclusion: A nationwide consensus on the clinical department that should be involved, which health workers should administer the agent (gynecologist, pediatrician, or midwife), and which substance should be used for ophthalmia neonatorum prophylaxis must be reached. By using a similar survey other countries may also assess their current situation, and decrease the occurrence of neonatal conjunctivitis and neonatal blindness by administering the appropriate substances.

Key words: Gentamycin, neonatal conjunctivitis, ophthalmia neonatorum, povidone-iodine, prophylaxis

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Türkiye genelinde neonatal konjonktivit profilaksisi hakkında anket

Amaç: Türkiye'de neonatal konjonktivit profilaksisinde mevcut durumu analiz etmek.

Yöntem ve gereçler: Kadın doğum ve pediatri kliniğinin her ikisini de içeren 24 üniversite ve 24 devlet hastanesine neonatal konjonktivit profilaksisi uygulayan klinik, uygulanan ilaç (eğer varsa dozu) ve hangi sağlık çalışanının (kadın hastalıkları ve doğum hekimi, çocuk hastalıkları hekimi veya ebe) uygulama yaptığına dair bir anket hazırlanarak uygulandı.

Bulgular: Neonatal konjonktivit profilaksisi ortalama olarak % 58,3 oranında (üniversite hastaneleri % 66,7 ve devlet hastaneleri % 50) uygulanmakta idi. En sık kullanılan iki ilaç gentamisin 18/28 (% 64,3) ve tobramisin 4/28 (% 8,3) idi. Diğer kullanılan ilaçlar ise tetrasiklin, gümüş nitrat, povidon-iyot, basitrasin + neomisin ve penisilin G idi.

Sonuç: Ülke genelinde oftalmia neonatorum profilaksisinde hangi klinik departmanın, hangi sağlık çalışanının (kadın hastalıkları ve doğum hekimi, çocuk hastalıkları hekimi veya ebe) ve hangi ilacın kullanılacağı konusunda bir fikir birliği gerektiğini düşünmekteyiz. Diğer ülkeler de böyle bir anketle mevcut durumu belirleyerek uygun antibiyotiklerin kullanımı ile neonatal konjonktivit ve neonatal körlük sıklığını azaltabilirler.

Anahtar sözcükler: Gentamisin, neonatal konjonktivit, oftalmia neonatorum, povidon-iyot, profilaksi

Received: August 07, 2008
Accepted: June 19, 2009

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* The authors have no financial interest in any product mentioned.

Introduction

Ophthalmia neonatorum is a form of conjunctivitis that can occur during the first month of life due to various etiological factors, including *Neisseria gonorrhoeae*, *Chlamydia trachomatis*, viruses, and chemicals (1). During the 19th century the single greatest cause of blindness in newborns in Western countries was gonorrheal keratitis, until Crede introduced the use of 2% silver nitrate ophthalmic solution to the eyes of newborns (2). With the use of this prophylaxis the incidence of neonatal conjunctivitis was reduced significantly. With the development of new antibiotics, neonatal conjunctivitis is no longer a major health problem in developed countries.

Although silver nitrate has a broad antimicrobial spectrum, its effectiveness against chlamydia is limited. Chlamydia, which was one of the most important causes of neonatal conjunctivitis in the past, today remains a current health issue. In many countries other drugs used for this prophylactic purpose include erythromycin, tetracycline, gentamycin, and povidone-iodine (3-7).

There are limited data about the prophylactic programs in Turkish hospitals for the prevention of neonatal conjunctivitis. In addition, guidelines for a national standardized prophylactic program for neonatal conjunctivitis in Turkey are lacking. As such, we sought to analyze the current practice of neonatal conjunctivitis (ophthalmia neonatorum) prophylaxis in Turkey.

Materials and methods

A standard questionnaire was prepared and administered to 24 university hospitals and 24 registered community hospitals that have both pediatric and obstetric units. The questionnaire collected data about the name and location of the clinical setting, the name and dosage of the medication used to prevent neonatal conjunctivitis (if there was any), and the department and preference concerning which health workers should administer the agent (gynecologist, pediatrician, or midwife). The study complied with the tenets of the Declaration of Helsinki. For statistical analysis the chi-square test was used to compare groups. $P < 0.05$ was considered statistically significant.

Results

Neonatal conjunctivitis prophylaxis was administered by 58.3% of all respondents (university hospitals [66.7%] and community hospitals [50%], $P = 0.38$). There was not a preferred method or antibiotic used for prophylaxis, for vaginal delivery or caesarian section, in both groups of hospitals. Pediatric clinics and pediatricians were mainly responsible for the prophylaxis of neonatal conjunctivitis in both university and community hospitals (Figures 1 and 2).

The 2 most frequently administered substances were gentamycin 18/28 (64.3%) and tobramycin 4/28 (8.3%). Other substances used were tetracycline, silver nitrate, povidone-iodine, bacitracin + neomycin, and penicillin G. Figure 3 shows the use of substances in the hospital groups. All of the clinics administered antibiotics once on the first postnatal day; none administered antibiotics twice.

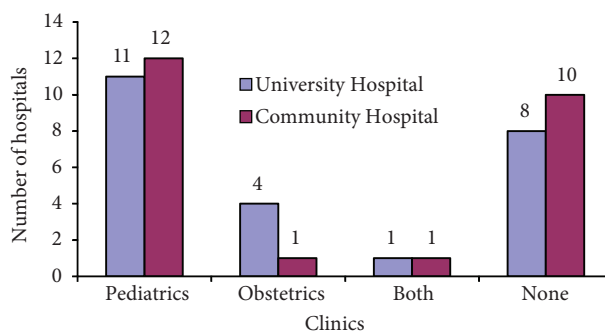


Figure 1. Pediatric clinics were primarily responsible for prophylaxis of neonatal conjunctivitis, in both university and community hospitals.

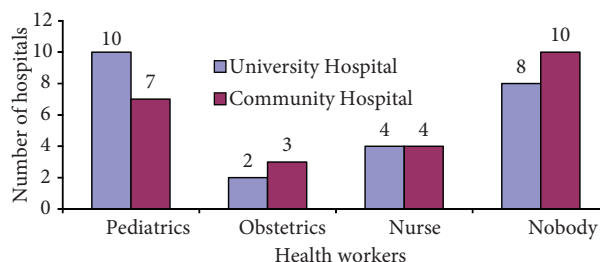


Figure 2. The health workers in charge of administrating prophylaxis in the study hospitals.

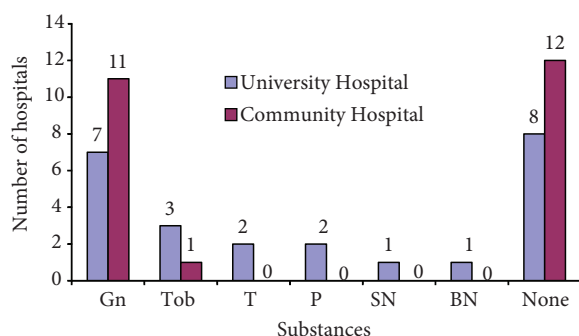


Figure 3. The number of substances used for prophylaxis in the study hospitals.

Gn: Gentamycin; Tob: tobramycin; T: terramycin; P: penicillin; SN: silver nitrate; BN: bacitracin + neomycin.

Discussion

Socioeconomic flaws as well as a lack of national guidelines for prophylaxis of ophthalmia neonatorum play a major role in developing countries. One of the most commonly used substances for neonatal conjunctivitis prophylaxis in hospitals in developing countries is 2.5% povidone-iodine ophthalmic solution (5,8). The efficacy of povidone-iodine was reported to be significantly higher than no prophylaxis (9), erythromycin (8,10), or silver nitrate (8) for prophylaxis of neonatal conjunctivitis. Povidone-iodine was also reported to be less toxic to the eye than silver nitrate and erythromycin (8), and to have no adverse effects on thyroid-stimulating hormone levels or renal iodine excretion in newborns (10). Unfortunately, povidone-iodine was not used in any hospital included in the present study.

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In the current study we observed that there was no consensus in major hospitals regarding prophylaxis against ophthalmia neonatorum. Neonatal conjunctivitis prophylaxis was administered by 66.7% of university hospitals and 50% of community hospitals; the other hospitals that responded to the survey did not use prophylaxis, and the difference was not statistically significant ($P = 0.38$). Additionally, the substances used for prophylaxis showed heterogeneity. Assadian et al. (11) also reported that the methodology of prophylaxis and the substances used in Austria showed heterogeneity. Both pediatricians and obstetricians may play a major role and they should reach a consensus on the substance or method of prophylaxis, so as to avoid any mix ups or discrepancies in administration. There must also be a consensus among doctors, nurses, and midwives.

In Turkey there are limited data available regarding ophthalmia neonatorum prophylaxis, as well as the lack of a national guideline. A nationwide agreement for ophthalmia neonatorum prophylaxis in Turkey is necessary in order to change the current routine, and to decrease neonatal conjunctivitis and neonatal blindness. At this point, povidone-iodine is promising and deserves serious consideration in the prophylactic treatment against ophthalmia neonatorum in developing countries, because of its efficacy, low cost, and availability. Using a similar survey other countries can also assess their current situation and develop a nationwide consensus on how to decrease neonatal conjunctivitis and neonatal blindness.

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