

Analysis of Negligence in field of Neonatology in Medical Commissions Office in Tehran, Iran

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ARTICLE INFO

Article Type:
Original Article

Article History:
Received: 14 Dec 2015
Revised: 21 Dec 2015
Accepted: 27 Dec 2015

Keywords:
Negligence
Complaints
Neonates

ABSTRACT

Background: Despite progression of medical's science, patient's complaints are increased. Analysis of risk factors cause to decrease complaints.

Methods: This research is a retrospective study of medical malpractice cases in neonates' from 2012 to 2014 in Medical Commissions Office in Tehran province.

Results: Among 171 cases were studied, 53 cases were in neonatal period. 30.1% was announced medical malpractice. Ages of most infants were 0-10 days (88.6%), 66% of babies were male, 69.8% had full-term gestation, 62.2% APGAR (Appearance, Pulse, Grimace, Activity, Respiration) score of neonates was above 7 and 73.5% of cases were the first child of the family. Most babies had cerebral palsy and asphyxia (20.7%), then respiratory distress syndrome (11.3%), furthermore shoulders dystocia and brachial plexus damage (7.5%). Ages of most plaintiffs (parents of neonates) were 30-39 years. Most of them were male, and their levels of education were high school and lower. The most cause of parent's claim was medical mistake.

Conclusion: Levels of parents' education may relationship with complaints and increasing their awareness can effect to decrease these.

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► *Implication for health policy/practice/research/medical education:* Negligence in field of Neonatology

► *Please cite this paper as:* Fallahi M, Vaghefi SS, Makhmalbaf M, Kazemian M, Afjeh SA, Mostafazadeh B. *Analysis of Negligence in field of Neonatology in Medical Commissions Office in Tehran, Iran. International Journal of Medical Toxicology and Forensic Medicine.* 2016; 6(3): 135-41.

1. Introduction:

Medical malpractices are one of the problems in the medical and public health. This can damage to the patient and the health care costs (1). According to international studies despite progression of medical's science, patient's complaints are increased.

According to studies conducted in the US in 1970s, about 3-4% of the physicians were complaining, but increase to 20% in 1980s and to 25% in 1990s (2). The rate of complaints in Sweden during five years, was ten thousand, (average of two thousand cases per year), which in later years this number increased to five thousand cases a year. The causes of this trend in recent years include increasing population, increasing awareness among patients, physician's inadequate knowledge about the legal issues and the development of standards of medical care referred. The main reason for this growing trend is inappropriate relationship between doctors and patients, special medical, social and financial problems that lose usual and traditional communications between them. This cause spent of time and cost for patient and full stress for the physicians (3, 4).

Neonatal periods (first 28 days of life), is one of the most critical periods of life. Due to advances in neonatology and neonatal intensive care of them in the Neonatal Intensive Care Unit (NICU), survival rate of more preterm and sick babies are increasing (5), thus raise the level of expectation of the parents from baby-care system. It seems that the complaints and malpractice in the age group of infants is also increasing. As a result, the study of malpractice in the area of neonatal age may determine the factors causing them, and thus the prevention of complaints. Reviews on articles published in the field of medical malpractice in the NICU, showed frequency of errors but there is few studies about underlying factors. In the USA's study on 1813 participating physicians from experience NICU staff

(75% of all physicians of NICU), 43% had at least one experience of medical malpractice against their own, in 1997 (6). Babies admitted to the NICU are very small, fragile, and often have immature organs that are damaged during diagnostic and therapeutic procedures. Some infants need to intensive care, and multiple drug treatments, invasive diagnostic and therapeutic procedures during their prolonged hospitalization. Every infant in NICU, as usual receives health care from a team that it can increase the likelihood of errors (7).

Due to the high vulnerability of these patients, sometimes small errors can lead to short-term or long-term harmful consequences, so neonatologists are at high risk for medical malpractice (8-10). There wasn't any study about medical malpractice related to neonates, in Iran. For this reason, in this research we studied medical malpractice in the field of newborns from 2012 to 2014 in Medical Commissions Office in Tehran. The aim of this study was analysis of complaints against physicians in the field of neonatology, epidemiology and demographic characteristics of plaintiffs and neonates and underlying disease of them. This research can help to improve care of neonates in NICU and provide solutions to reduce complaints.

2. Materials and Methods:

This research was a cross-sectional and retrospective study of medical malpractice cases in neonates' from 2012 to 2014 in the Medical Commissions Office in Tehran province. Due to ethical considerations, formations were kept confidential, data logging, without naming and specifications. Study population was total cases of medical malpractice in the field of neonates in the Medical Commissions Office in Tehran province since the 2012 to 2014. Variables were age, sex and education of the plaintiff, cause of the complaint by the complainant, age, sex, underlying disease, and the maturity of baby, also Appearance, Pulse, Grimace, Activity, Respiration (APGAR) score at birth, delivery time, family history of similar problems or death, mode of

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delivery were collected and data were analyzed by software SPSS18.

3. Results:

In this study, 171 cases were investigated from 2012 to 2014. 53 cases of medical malpractice were in the fields of neonatal periods, which 32.1% (n=17) cases in 2012, 34% (n=18) and 34% (n=18) cases were in the years of 2013 and 2014 respectively. 32% (n=17) of the complainant (parents) were at aged 30-39 years. Sex of plaintiffs in 83% (n=44) were male (the father of the baby) and in 17% (n=9) were female (mother) (Table 1). The most frequent complainants education with 24.5% (n=13) was less than high school, 60% (n=47) of neonates were in the age of 0-10 days, 66% (n=35) were male and 34% (n=18) were female (table 2) (Figure 1). 69.8% (n=37) of the baby's gestational age were more than 37 weeks of gestation. 62.2% (n=33) had the APGAR score above 7, 73.5% (n=39) were first sibling. In 88.7% of families of children there weren't a positive family history; mode of delivery were caesarian section 73.6%. Underlying diseases of infants caused to complaints of parents contains: cerebral palsy and asphyxia (dissatisfaction with the delay in delivery or delay in deciding caesarian section rather than normal vaginal delivery by gynecologists) in 20.7% (n=11), respiratory distress syndrome (dissatisfaction with the delay in starting treatment and the lack of reference to a equipped hospital center) with 11.3% (n=6), and shoulder dystocia and brachial plexus injury (dissatisfaction from delivery mode) in 7.5% (n=4). congenital heart disease (dissatisfaction with the delay in diagnosis) in 3.7% (n=4), cephal hematoma, intra-ventricular hemorrhage, and skull fracture (dissatisfaction with the delay in caesarian section) 3.7% (n=4), developmental dislocation of hip (dissatisfaction with the delay in diagnosis) 3.7% (n=4), meningitis (dissatisfaction with the early discharge from hospital) 3.7% (n=4), necrotizing enterocolitis (dissatisfaction with the delay in diagnosis and treatment) 3.7% (n=4), fracture of femoral bone during delivery in 1.8% (n=2), femoral fracture during

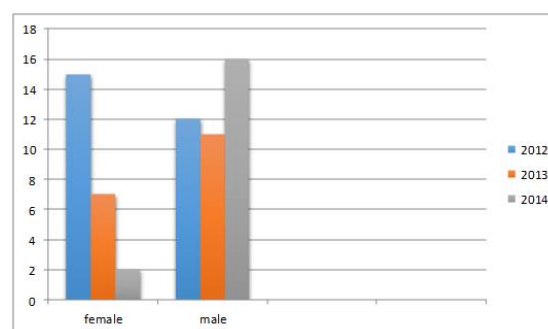


Fig. 1. Distribution of sex in neonate.

admission due to sepsis in 1.8% (n=2), scar formation in injection site in 1.8% (n=2), pseudoaneurysm in radial artery in injection site during admission due to respiratory distress syndrome (RDS) in 1.8% (n=2), Edward syndrome, down syndrome, baby with short arm chromosome, and metabolic disorder (dissatisfaction with lack of screening during pregnancy) in 1.8% (n=2), 1.8% (n=2), 1.8% (n=2), and 1.8% (n=2) respectively. 5th, testicular torsion (dissatisfaction with failure to timely diagnosis and treatment on time), ischemia in left hands fingers in 1.8% (n=2), wrist drop and laceration of soft tissue of right elbow during delivery (dissatisfaction with poor management of labor in 1.8% (n=2), amputation of 5th finger of right hand after removal of IV line in 1.8% (n=2), syndactylism in 4th and 5th finger of foot (dissatisfaction with lack of diagnosis during pregnancy) in 1.8% (n=2), intrauterine fetal demise (IUID) (dissatisfaction with poor fetal well-being tests) in 1.8% (n=2), maternal and neonatal death due to amniotic fluid emboli (dissatisfaction with delay diagnosis and treatment) in 1.8% (n=2), cardiorespiratory arrest followed by IV line insertion for treatment of neonatal sepsis in 1.8% (n=2), diarrhea and vomiting (dissatisfaction with prescribe syrup of diphenhydramine in 1.8% (n=2), intrauterine fetal demise (IUID) in 1.8% (n=2), seizure and death in neonates with diarrhea and vomiting in 1.8% (n=2), neonatal death after meconium aspiration syndrome (dissatisfaction with delay in delivery), fetal distress in an infant of diabetic mother in 1.8% (n=2).

Table 1: Demographic characteristics of the plaintiffs were investigated by year.

	year	2012	2013	2014	Total (%)
Sex	Male	14	15	15	44 (83)
	female	3	3	3	9 (17)
Age (y)	20-29	3	5	3	11 (20.8)
	30-39	4	6	7	17 (32.1)
	40-49	-	1	1	2(3.8)
	unknown	10	8	5	23 (43.4)
Education level	Bachelor associate	3	4	3	10 (18.8)
	high school	0	1	2	3 (5.6)
	beyond high school	3	6	4	13 (24.5)
	unknown	11	7	9	27 (50.9)

Table 2: Demographic characteristics of the cases studied infants by year.

	year	2012	2013	2014	Total (%)
Sex	Male	12	7	16	35 (66)
	female	15	11	2	18 (34)
Age (day)	0-9	15	14	18	47 (88.6)
	10-19	2	0	1	3 (5.6)
	20-30	1	1	1	3 (5.6)
Gestational age	Term	12	10	15	37 (69.8)
	Late	3	6	2	11 (20.7)
	Preterm	2	2	1	5 (9.4)
Mode of delivery	NVD	4	6	4	14 (26.4)
	C/S	13	12	14	39 (73.6)
APGAR score	7-10	11	11	11	33 (62.2)
	<7	6	7	7	20 (37.8)
Delivery time	First child	12	15	12	39 (73.5)
	Second	5	2	4	11 (20.7)
	Third	0	1	1	2 (3.7)
	Forth	0	0	1	1 (1.9)
	FH+	1	1	4	6 (11.3)

NVD: normal vaginal delivery, C/S: cesarean section

4. Discussion:

In this research, we studied about complaints of parents of neonates that admitted in hospitals and we evaluated epidemiologic characteristics of parents and neonates in

forensic and legal medicine organization in Tehran. It is the first study about malpractice cases in the field of neonatology in IRAN. According to international studies, despite progression of medical's science, patient's

complaints have been increased. Study in the causes and risk factors for these complaints can reduce medical claims, and this has a significant impact on increasing the confidence of physicians.

The most important factors in medical complaints were: lack of communication with patients and his relatives about the possible unpredictable effects of treatment, high cost of treatment, lack of physicians expertise and proper records, failure to care after the surgery, lack of knowledge and information and updated medical, unavailability of medical centers, lack of attention to the culture and traditions and beliefs patients (11). Studies show that patients expect their physicians based on age, gender and level of education and also on the type of underlying disease. For this reason, in this study the above factors were evaluated (12).

In a research about causes of complaints of anesthesiologists by Mahfouzi and colleagues at Tehran Medical Council in 2007, the average age of the complainants was 31.94 years. (1) Also Rafieezadeh Tabatabaee and colleagues in a study regarding the failure of general practitioners in 2007, found that the average age of the complainants was 33.4 years (13). In a study was done by Syabany and colleagues in Kermanshah Medical Council (2009) the most frequently age of complaints were 20-30 years (26.4%) (3). In our study, we found that 35.5% of the plaintiffs were in the age of 30-39 years (average ages were 34.3 years). Studies have shown that younger patients because of impatience were in the rush to recovery and they have more time to complain, thus they usually more likely to be dissatisfied with their physicians (12). Although considering that this study is the evaluation of medical malpractice in neonates and it's logical that the age of parents were mainly within the range of fertility age.

Hejazi and colleagues in a study to investigate cases of medical malpractice in the field of children referred to Urmia medical council's in 2009, found that 70.3 percent of patients were male (14). Moreover, it seems that in most studies the

complainants were men (3, 13, 15-17). Genders of newborns in 66% of cases were male. According to our study it was in the field of medical malpractice in neonates, fathers as responsible for the baby, and it is logical that higher percentage of males among the plaintiffs (83%). Because male sex is the risk factors for diseases in neonatal periods, as a result most complaints were related to boys (17).

In the study of MirAkbari in 2002, 60.8% of cases had high school education. In this study education level of plaintiffs was in more cases lower than high school (18). Such as our research, According to study of Sadr and colleagues in 2007, about medical malpractice in the field of orthopedics, most education level of plaintiffs were high school or less (19). According to Prakash B, in 2011, complaints increased in people with less education, perhaps because inconceivable, unrealistic expectations of treatment and opportunity for addressing the complaint, these people may have less information about their disease, its treatment methods and also less likely to gain information through scientific resources (12). In this study the causes of complaint from the perspective of the plaintiffs in 41.5% was medical errors and then in 37.7% was the lack of expertise.

In study by Rafeezadeh Tabatabaee and colleagues in 2007 showed that the most common cause of failure of general practitioners, were the lack of proper medical treatment (13). Study of Jafarian and colleagues about the complaints in 2009, to the Medical Council of Tehran' showed that most important causes of complaints were medical errors, then inattention in 30.2%, afterward the lack of financial issues (17). In a conclusion of a study done by Syabany and colleagues, the most common cause of complaint was the treatment effect (3).

According to our study was done in 2009, despite the most population of neonatal intensive care units are preterm infants and 60% of neonatal mortality is related to this group, but in this study we found that 69.8% of neonates were term and late preterm (gestational age ≥ 37 weeks and 34-37 weeks

respectively), and only 9.4% were preterm (gestational age ≤ 34 weeks). So parents have no hope of surviving premature infants (20). In our previous study was done in 2014, mode of delivery can effect in neonatal outcome then can be effect in complaints of parents. In our research, 73.6% of cases delivered by cesarean section (21). Normal vaginal delivery is the standard route of delivery. Cesarean Section can increase risk of some disease such as hyaline membrane disease (HMD), transient tachypnea of neonates (TTN) in neonates. However the high risk fetuses need more immediate delivery through caesarian section (21). In our research 62.2% of cases had normal APGAR score (7-10) however most causes of complaints were hypoxic ischemic encephalopathy (HIE) (asphyxia). The low APGAR score has little correlation with neonatal HIE.

We found that 73.5% of complaints were related to first child of family. With the increasing number of sibling, the probability of complaints of parents was decrease.

5. Conclusion:

In attention to most complaints in term infants was birth asphyxia and cerebral palsy, more intensive care in intra partum periods by midwives and gynecologists, therefore prenatal and neonatal care cause to reduce complains. Due to development in neonatology and neonatal intensive care, most preterm and sick babies increased their survival. Expectation level of parents, rise from neonate-care unit. Also levels of parents' education may relationship with complaints and increasing their awareness can effect to decrease these.

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