

Late preterm infant—Nature's unfinished master piece

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Abstract: Late preterm infants (LPI) are preterm infants born at a gestational age between 34 and 0/7 weeks to 36 6/7 weeks. Because of their physiologic and metabolic immaturities, they are at increased risk for a spectrum of morbidities and mortality when compared to the term infants. LPI are "great pretenders and masqueraders", as they pretend to be and masquerading as term infants. Because of their size, frequently they are treated as term infants with potential for bad consequences. In this review, the incidence and high risk factors for late preterm deliveries, early morbidities, late complications and management are described. Computerized data bases such as PubMed, OVID and Embase were searched between January 2005 and March 2012, by using the search terms, Late Preterm Infants and Near Term Infants. From this detailed search available, evidence based guidelines were incorporated in the care of these LPI.

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Key words: Respiratory distress; Hypoglycemia; Late preterm infant

1 Introduction

The phrase "Late Preterm Infants" (LPI) was coined by a multidisciplinary team of experts at a National Institute of Child Health and Human development (NICHD) workshop entitled "Optimizing Care and Outcome of the Near-Term Pregnancy and Near-Term Newborn infant, held in July 2005^[1]. One of the recommendations of that consensus conference was to replace the phrase near-term with the late preterm. LPI are "great pretenders and masqueraders". They pretend to be and masquerading as term infants despite their physiologic and metabolic immaturities. This unstable metabolic status contributes to their spectrum of various morbidities and increased mortality when compared to the term infants. The rate of preterm births in the United States has increased from 9.1% in 1981 to 12.3% in 2003^[1], an increase of 31%, most of which was attributable to an increase in the proportion of LPI^[1].

between 34 and 0/7 weeks to 36 6/7 weeks^[2] (239 to 259 days-post menstrual age). Preterm is described by birth occurring on or before the end of the last day of the 37th week (259th day), following the onset of the mother's last menstrual period. Term is defined by birth occurring on the first day (260th day) of the 38th week through the end of the last day of the 42nd week (294th day), following the onset of the last menstrual period. Based on the rapidly accumulating morbidity and mortality data, currently there is increasing focus on early-term infants, those that are born between 37 and 0/7 weeks and 38 and 6/7 weeks in comparison to late-term infants (born at 39 0/7 to 41 6/7 weeks). Such categorization of newborns helps clinicians to pay attention to common causes and outcomes (morbidity and mortality), so that they can coordinate strategies to facilitate care of this vulnerable population. This review article's scope is limited to the discussion on LPI only, who currently comprise 70% to 75% of all preterm deliveries.

2 Definitions

LPI are preterm infants born at a gestational age

3 Causes and risk factors

Several reasons were attributed to the recent

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increase in the number of late preterm births. The frequently reported ones include demographic changes of women who become pregnant (such as delayed child bearing), infertility treatments, increased maternal age, increased multiple gestations, and maternal co-morbidity especially obesity^[3]. Maternal chorio-amnionitis, hypertension and premature rupture of membranes are statistically proven contributors to LPI^[3-4]. Previous preterm delivery, short inter-pregnancy interval (<12 months) and early pregnancy bleeding is found to increase the risk for LPI delivery^[5]. Other reported risk factors include, preeclampsia, placental abruption, fetal compromise including intrauterine growth restriction, oligo-hydramnios, pre-gestational diabetes and gestational diabetes, non-reassuring fetal heart rate etc. In 6.1% to 23.2% of LPI deliveries, it was noted that there was either no documentation of the indication or presence of an avoidable delivery^[6-9]. The mothers with no recorded delivery indications^[9] had the characteristics of being older, non-Hispanic white race, educated (>13 years of education), multi-parous, or having delivered a previous infant with a birth weight greater than or equal to 4 000 grams.

4 Mortality

Mortality has long been associated with gestational age, with the lowest mortality in infants born at 39 to 40 weeks^[9-10]. The March of Dimes Perinatal center data (2007)^[11] showed that the mortality rate of LPI is three times that of term infants. In actuality, that ratio remained almost the same since 1995, but that fact came to light because of the resurgence of the interest in LPI, as a result of NICHD workshop in July 2005^[10]. In the year 1995 the mortality for term infants was 3 per 1 000 live births and for LPI was 9.5/1 000; in 2002 the mortality for term infants was 2.4/1 000 live births and LPI was 7.9/1 000. Obviously, LPI are at much higher risk for mortality than term infants.

5 Early morbidities

Several risk factors make these LPI vulnerable to a spectrum of various morbidities. They include, younger gestational age, small for gestational

age, multiple gestation, lack of antenatal steroid administration, emergency cesarean delivery, complicated vaginal delivery, antepartum hemorrhage, hypertensive disorders of pregnancy, maternal diabetes, maternal pulmonary, cardiac or renal disease, Apgar score of less than 7 at 5 minutes of age, male, minority ethnicity or race, lower levels of maternal education, primipara or grand multipara, maternal smoking and public insurance^[3]. In a case controlled study, comparing short-term neonatal outcomes in 2 478 LPI to 7 434 term infants delivered after spontaneous low-risk deliveries, the rate of morbidities decreased as gestational age increased from 34 to between 39 and 40 weeks^[12].

LPI are at a higher risk for developing respiratory distress syndrome, transient tachypnea of newborn, persistent pulmonary hypertension, acute respiratory failure, jaundice requiring phototherapy, bilirubin induced neurological dysfunction (BIND), kernicterus, feeding problems, lactation issues, dehydration, hypernatremia, hypoglycemia, hypothermia, sepsis, intra-ventricular hemorrhage (IVH), periventricular leucomalacia (PVL), admission to a neonatal intensive care, re-hospitalization after discharge etc. when compared to term infants.

In a population study done by Gouyon et al^[13], looking at the data of 150 426 live-born infants, severe respiratory failure (need for mechanical ventilation and/or nasal continuous positive airway pressure) decreased from 20% at 34 weeks' gestation to 0.35% at 39 to 41 weeks' gestation. The risk of death and/or severe neurological disorder (Ischemic encephalopathy, grade III or IV IVH, cystic PVL and/or seizures decreased from 1.7% at 34 weeks' gestation to 0.15% to 0.16% at 38 to 41 weeks' gestation. In a retrospective study^[14] of a very large group of infants (26 170 LPI versus 377 638 term infants), LPI group was noted to have increased morbidity, 7 times more frequently than term infants (22% vs 3%, respectively). When compared to term infants, LPI are at higher risk for hypothermia (10% vs 0%), respiratory distress (29% vs 4%), jaundice (54% vs 38%), feeding problems (32% vs 7%), and admission to a neonatal intensive care^[15] (shortly after delivery). LPI also require intravenous fluids (3.4 vs 0.9%), get evaluated for sepsis (37% vs 13%) and receive

mechanical ventilation, more frequently than term infants. In another population based cohort study^[16] of the 9552 late preterm "healthy" infants, 4.8% had an inpatient readmission and 1.3% had an observational stay. Among the 577 hospital readmissions and observational stays, the principal diagnoses were jaundice (63%), followed by infection (13%). Among all the other diagnoses, each accounted for less than 5%.

6 Long-term complications

They include poor school performance, behavioral problems, social and medical disabilities and mortality^[17-19]. The risk of cognitive delay was significantly high in LPI (21% vs 12%). Internalizing and attention problems are 2 to 3 fold more frequent in LPI than in term infants.

In assessing school performance especially reading skills, and the need for special education, LPI lag behind term infants when assessed between kindergarten and grade 5^[20]. LPI were more likely (3 fold) to have the diagnosis of cerebral palsy than term infants^[17]. During early adulthood, LPI are at higher risk for hospitalization for psychiatric illnesses than term infants^[18].

7 Management

Since 2006 publication of recommendations of NICHD workshop, entitled "Optimizing Care and Outcome of the Near-Term Pregnancy and Near-Term Newborn infant", at least 12 Statewide and National organizations published their own guidelines for the care of the Late Preterm Infants in the United States. They are quite a bit similar, as their sources are the same to a large extent. Also, they are more based on experts' opinion than evidence based. The guidelines have been modified periodically coinciding with the accumulation of evidence. One of those organizations is Oklahoma Infant Alliance^[21]. An acceptable and accurate gestational age assessment (using tools like modified Dubowitz or Ballard score) is essential for providing care to LPI^[21]. Many neonatal units including ours, have a policy to admit all LPIs born at <35 weeks completed gestation or <1 800 grams

to a special care nursery or equivalent^[3]. It's also a common practice to have a specific protocol for LPI, independent of other preterm or term infants. LPI are at higher risk for delayed transition^[3], a fact that demands for a special attention when designing a neonatal ICU, for providing care to mother-LPI dyads. That protocol needs to address the admission criteria, to be based on acuity, minimum length of transition time in the delivery area/suite, length of stay, temperature regulation, feeding issues, lactation issues, blood glucose monitoring/glycemic control, jaundice surveillance, sepsis screen, management of respiratory issues, discharge criteria, follow up plans.

It is recommended to have the following criteria fulfilled prior to the discharge of a Late Preterm Infant: a minimum of 48 hours of stay in the nursery/SCN, stable vital signs including temperature for 24 hours, 24 hours of successful feeding either by breast or bottle (observed and documented), passage of stool at least once, weight loss less than 7%, total bilirubin measured and appropriate therapy given, hepatitis-B vaccine given, newborn metabolic screen done, car seat safety test passed, hearing screen done, maternal laboratory tests reviewed, assessment of family, environmental and social risk factors, completion of family education etc^[3]. It is imperative that post-discharge follow up plan including medical care is in place prior to discharge. A follow up visit needs to be scheduled with the infant's physician/health care professional within 24 to 48 hours after discharge. A home health care nurse visit within 72 hour after discharge is encouraged^[3].

8 China experience

In a 2009 multicenter study (11 tertiary hospitals) from China, done by Ma et al^[22], to assess birth rate, delivery mode, medical problems, requirement of respiratory support, and acute outcomes of LPI in Zhejiang Province in eastern China, clinical data of all 11 nursery admissions from January to December 2007 were collected and analyzed. During the study period, 44 362 infants were born with an overall preterm birth rate of 8.9%, and late preterm birth rate of 6.2%. LPI had higher cesarean section rate than the whole population (64.9% vs 58.2%). One-fifth of the nursery

admissions were LPI, of whom, 63.8% were delivered by cesarean section. Respiratory distress (42.1%) was the most common medical problem of LPI. The list of all other problems was led by hyperbilirubinemia (17.6%), followed by hypoglycemia (8.7%) and sepsis (5.9%). The first three primary diagnoses of respiratory distress included pneumonia (39.5%), transient tachypnea of newborn (TTN) (22.5%) and respiratory distress syndrome (RDS) (19.0%). Compared with term infants, LPI with respiratory distress needed more respiratory support with nasal continuous positive airway pressure (nCPAP) (21.4% vs 11.6%) or with a mechanical ventilator (15.4% vs 11.0%), and also had higher in-hospital mortality (0.8% vs 0.4%). The group concluded that "LPI are associated with very high cesarean section rate and have more medical problems and poorer short-term outcomes than term infants in China".

In another study done at Beijing, completed during the same study period, Xu et al^[23] assessed the birth rate, mortality, complications, related factors of preterm infants at Beijing Haidian Maternity and Children's Hospital in 2007, with the purpose of establishing the foundations for a more systematic and effective program for clinical treatments. Data of all the neonates born at Beijing Haidian Maternity and Children's Hospital during the period from January 1, 2007 to December 31, 2007 were recorded and analyzed. All near-term infants (LPI) of 35-37 weeks of gestational age were taken into observation group. Within 24 hours after birth, blood routine examination, urine and stool routine examination, blood gas analysis and electrolytes, blood glucose monitoring (at 1st, 3rd, 6th, 12th, and 24th hours), chest radiography examination, skull and heart color Doppler ultrasonographic examinations were conducted. Full-term infants who were born on the first day of every month were randomly selected as a comparison group (total 350 cases) or statistical analysis. Of the 12286 infants born during the study period, 333 were LPI; the birth rate of LPI was 2.71%. Among the complications, the hyperbilirubinemia was the leading diagnosis (33.6%), followed by respiratory distress (16.8%), hypoglycemia (9.0%), intracranial hemorrhage (8.1%), anemia or erythrocytosis (5.7%), and digestive system disease (5.4%). The lengths of

hospital stay of LPI, 5.1 ± 3.90 d, were significantly longer than those of full-term infants which was 3.2 ± 1.61 d. They found that the occurrence rate of complications and mortality rate were higher than those of full-term infants. In that study population, pregnancy-induced hypertension, anemia, premature rupture of membranes and twins are the major causes of higher morbidity and mortality of LPI.

9 Conclusion

The rate of preterm birth is increasing worldwide primarily due to LPI^[1]. LPI are undoubtedly at a significantly higher risk for both increased morbidity and mortality, when compared to term infants. LPI belong to a special group of babies (nature's unfinished master piece), which has gotten its much deserved recognition only since 2006 (NICHD workshop, July 2005). Since then, there has been an exponential increase of information about LPI. Despite this information that is available for providing care to these LPI is still not evidence based. Therefore, large multi-centered prospective studies are needed to formulate guidelines and to provide education to the health care professionals that provide care to this vulnerable, understudied and often neglected population. Based on the available evidence and experts' opinion, the authors recommend advocating "special treatment" of LPI, which includes identifying risk factors, close monitoring, adopting preventive strategies, providing optimal therapy if and when needed, strictly adhering to discharge criteria, and following close but still individualized post-discharge follow up plan. This approach has the potential not only to help us, the health care professionals, in providing both anticipatory and preventive guidance and medical management as needed, but also may help us save some financial resources. In view of the great impact of LPI exerting on society, World Health Organization and American Academy of Pediatrics have called for a long-term evaluation, monitoring and follow-up of this vulnerable population^[1].

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附中文参考译文（晚期早产儿—大自然未完成的杰作）

【摘要】 晚期早产儿（late preterm infants）是指胎龄为34~36⁺⁶周的早产儿。由于生理和代谢功能不成熟，与足月儿相比，晚期早产儿发病率 and 病死率较高。晚期早产儿是“极好的冒充者和假装者”，因为他们冒充并假装成足月儿。因其体型大小与足月儿相似，他们常常被当作足月儿，从而造成潜在的不良后果。本综述阐述了晚期早产的发生率和高危因素、早期疾病、晚期并发症，以及医疗护理。我们使用关键词“晚期早产儿”和“近足月儿”对2005年1月至2012年3月期间PubMed、OVID、Embase等计算机数据库的文献进行了检索。通过详细检索，我们获得了用于晚期早产儿监护的一些循证指南。

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【关键词】 呼吸窘迫；低血糖症；晚期早产儿

1 前言

国家儿童健康和人类发展研究所（NICHD）于2005年7月召开了题为“近足月妊娠和近足月新生儿护理和预后的优化”的研讨会，会中多学

科专家组提出了“晚期早产儿”一词^[1]。这次共识会议的建议之一是将“近足月”一词替换为“晚期早产”。晚期早产儿是“极好的冒充者和假装者”，他们冒充并假装成足月儿，尽管他们的生理和代谢功能尚不成熟。这种不稳定的代谢状态

可引起各种疾病,且病死率较足月儿高。在美国,早产率已经从1981年的9.1%上升到2003年的12.3%,增幅达31%,其中大部分是因为晚期早产儿比例的增加^[1]。

2 定义

晚期早产儿是指胎龄为34~36⁺⁶周(月经后孕龄239~259 d)的早产儿^[2]。早产是指婴儿在母亲末次月经后第37周的最后一天(第259天)或之前出生。足月是指婴儿在母亲末次月经后第38周的第一天(第260天)至第42周的最后一天(第294天)出生。基于迅速积累的患病和死亡数据,目前越来越关注早期足月儿(胎龄37~38⁺⁶周)与晚期足月儿(胎龄39~41⁺⁶周)的比较。这样对新生儿分类有助于临床医生注意常见的早产原因和预后(患病和死亡),使他们能够调整策略,以便于对这一易患病人群的监护。本综述仅讨论晚期早产儿,他们目前占有所有早产儿的70%~75%。

3 早产原因和风险因素

晚期早产儿出生数量近期增加有以下几个原因。经常报道的原因包括孕妇的人口结构变化(如晚育)、不孕不育治疗、孕妇年龄增高、多胎妊娠增多,以及妊娠伴随疾病,尤其是肥胖^[3]。经统计证实,孕妇绒毛膜羊膜炎、高血压和胎膜早破可引起晚期早产^[3-4]。先前有过早产、两次怀孕间隔过短(<12个月)和怀孕早期出血会增加晚期早产的风险^[5]。报道的其他风险因素包括:先兆子痫、胎盘早期剥离、宫内生长受限等胎儿不良征象、羊水过少、孕前糖尿病和妊娠糖尿病、胎儿心率异常等。但6.1%~23.2%的晚期早产未见记录早产征象^[6-9]。没有早产征象记录的这些母亲具有以下特征^[9]:年龄较大、非西班牙裔白种人、受教育年限>13年、多胞胎,或先前生产的婴儿体重 $\geq 4\,000\text{ g}$ 。

4 病死率

病死率一直与胎龄有关,胎龄为39~40周的婴儿病死率最低^[9-10]。美国畸形儿基金会围产中心的数据(2007年)表明,晚期早产儿的病死率是足月儿的3倍^[11]。事实上,这个比例自1995年以来几乎保持不变,但直到2005年7月,NICHD召开了研讨会,使得晚期早产儿再次受到关注,

这一事实才为众人所知^[10]。1995年,足月儿的病死率为3/1000活产儿,晚期早产儿的病死率为9.5/1000活产儿;2002年,足月儿的病死率为2.4/1000活产儿,晚期早产儿的病死率为7.9/1000活产儿。显然,晚期早产儿的病死率比足月儿要高得多。

5 早期疾病

一些风险因素使得晚期早产儿易患各种疾病。这些因素包括:胎龄较小、小于胎龄、多胎妊娠、产前未服用类固醇、紧急剖腹产、复杂的阴道分娩方式、产前出血、妊娠高血压、妊娠糖尿病、母亲患有肺部、心脏或肾脏疾病、出生后5分钟Apgar评分低于7分、男性、少数民族或人种、母亲教育水平较低、初产妇或多产妇、母亲吸烟和公共医疗保险^[3]。在一项比较了2478名晚期早产儿与7434名足月儿在低风险自然分娩后短期新生儿结局的病例对照研究中,随着胎龄从34周增加至39~40周,发病率呈降低趋势^[12]。

与足月儿相比,晚期早产儿出现以下病症或情况的风险较高:呼吸窘迫综合征、新生儿暂时性呼吸增快、持续性肺动脉高压、急性呼吸衰竭、需要光疗的黄疸、胆红素引起的神经功能障碍、核黄疸、喂养问题、哺乳问题、脱水、高钠血症、低血糖症、低体温、败血症、脑室内出血、脑室周围白质软化、入住新生儿重症监护室、出院后再次住院等。

Gouyon等^[13]进行的一项人口研究调查了150426名活产儿的资料,其中重度呼吸衰竭(需要机械通气和/或经鼻持续气道正压通气)的发病率从34周胎龄婴儿的20%下降至39~41周胎龄婴儿的0.35%。死亡和/或重度神经障碍(缺血性脑病、Ⅲ或Ⅳ级脑室内出血、囊性脑室周围白质软化和/或癫痫发作)的发病率从34周胎龄婴儿的1.7%下降至38~41周胎龄婴儿的0.15%~0.16%。在一项大规模回顾性研究(26170名晚期早产儿与377638名足月儿)中,晚期早产儿组的发病率较高,是足月儿组的7倍多(分别为22% vs 3%)^[14]。与足月儿相比,晚期早产儿在以下方面风险较高:低体温(10% vs 0%)、呼吸窘迫(29% vs 4%)、黄疸(54% vs 38%)、喂养问题(32% vs 7%)、入住新生儿重症监护室(分娩后不久)^[15]。此外,晚期早产儿更加需要静脉输液(3.4% vs 0.9%)、评估败血症(37% vs 13%)、接受机械通气。另一项以人群为基础的群组研究中,在9552名“健康”

晚期早产儿中,有4.8%再次住院,1.3%住院观察;在再次住院和住院观察的577例患儿中,主要诊断为黄疸(63%),其次是感染(13%),其他诊断的比例都小于5%^[16]。

6 远期并发症

远期并发症包括在校表现差、行为问题、社会和医学失能以及患病^[17-19]。晚期早产儿认知迟缓的风险明显偏高(21% vs 12%)。晚期早产儿内化性和注意力问题的发生几率是足月儿的2~3倍。

在校表现评估,尤其是阅读技能和特殊教育需求方面,晚期早产儿在幼儿园至小学5年级期间不如足月儿^[20]。晚期早产儿诊断为脑瘫的可能性是足月儿的3倍多^[16]。在成年早期,晚期早产儿因精神疾病住院治疗的风险比足月儿高^[18]。

7 医疗护理

NICHD题为“近足月妊娠和近足月新生儿监护和预后的优化”的研讨会中得出的建议自2006年发表以来,美国至少有12个州级和国家级组织也发表了自己的晚期早产儿监护指南。它们颇有几分相似,因为其来源在很大程度上是相同的。此外,它们更多的以专家意见为基础,而不是以证据为基础。这些指南已定期作出修改,与不断积累的证据相一致。俄克拉何马州婴儿联盟是其中一家组织^[21]。合格、准确的胎龄评估(使用改良杜波威兹氏计分或巴拉德评分等工具)对晚期早产儿的护理是至关重要的^[21]。许多新生儿病房(包括我们)都有让所有胎龄<35周或体重<1800g的晚期早产儿进入特护婴儿室或类似地方的政策^[3]。另一常见的做法是为晚期早产儿制定不同于其他早产儿或足月儿的特定方案。晚期早产儿出现转移延迟的风险较高^[3],这一事实要求在设计新生儿重症监护室时应特别注意,以方便同时向母亲和晚期早产儿进行护理。该方案需要确定入住标准(根据严重程度)、在分娩区域/套房内的最短过渡时间、入住时间、温度调节、喂养问题、哺乳问题、血糖监测/血糖控制、黄疸监测、败血症筛查、呼吸道问题处理、出院标准和随访计划。

建议在晚期早产儿出院前应满足下列标准:留在育婴室/特护婴儿室最少48h、体温等生命体征保持稳定24h、成功母乳喂养或奶瓶喂养24h(观察并记录)、至少一次大便、体重减轻小于7%、已检测总胆红素并给予适当治疗、已接种乙型肝炎

炎疫苗、已进行新生儿代谢性疾病筛查、通过汽车座椅安全测试、完成听力筛查、已检查产妇产后检查结果、已评估家庭、环境和社会风险因素、完成家庭教育等。在出院前就应制定好出院后的随访计划,包括医疗护理。出院后24~48h内,应与该婴儿的医师/专业医护人员作出随访时间安排。鼓励家庭保健护士在出院后72h内进行访视^[3]。

8 中国晚期早产儿状况

在中国, Ma等^[22]于2009年进行了一项多中心研究(11家三级医院),评估中国东部浙江省晚期早产儿的出生率、分娩方式、医疗问题、呼吸支持要求和近期预后,收集并分析了2007年1~12月11家育婴室所有入住患儿的临床资料。研究期间,44362名婴儿出生,总早产率为8.9%,晚期早产率为6.2%。晚期早产儿的剖腹产率比整体人群高(64.9% vs 58.2%)。入住育婴室的患儿中五分之一是晚期早产儿,其中63.8%为剖腹产。呼吸窘迫(42.1%)是晚期早产儿最常见的医疗问题。其他问题主要是高胆红素血症(17.6%),其次是低血糖症(8.7%)和败血症(5.9%)。呼吸窘迫患儿最常被诊断为肺炎(39.5%),其次是新生儿暂时性呼吸增快(22.5%)和呼吸窘迫综合征(19.0%)。与足月儿相比,患有呼吸窘迫综合征的晚期早产儿更加需要经鼻持续气道正压通气(nCPAP)(21.4% vs 11.6%)或机械通气(15.4% vs 11.0%),他们的院内病死率也较高(0.8% vs 0.4%)。该研究小组得出以下结论:“在中国,晚期早产儿与较高的剖腹产率相关;与足月儿相比,晚期早产儿医疗问题更多,近期预后较差”。

Xu等^[23]于同一研究期间在北京完成了另一项研究,评估了2007年北京海淀区妇幼保健院早产儿的出生率、病死率、并发症和相关因素,旨在为确立更加系统有效的临床治疗方案奠定基础。这项研究记录并分析了2007年1月1日至12月31日期间在北京海淀区妇幼保健院出生的所有新生儿的数据。所有胎龄35~37周的晚期早产儿纳入观察组。出生后24h内,进行了血常规检查、尿液和大便常规检查、血气和电解质分析、血糖监测(分别在第1、3、6、12、24小时)、胸部X光检查、头颅和心脏彩色多普勒超声检查。每个月第一天出生的足月儿随机选入对照组(总计350例),进行统计分析。

在研究期间出生的12286名婴儿中,晚期早产儿333名,晚期早产儿的出生率为2.71%。高胆

红素血症为主要并发症(33.6%),其次是呼吸窘迫(16.8%)、低血糖症(9.0%)、颅内出血(8.1%)、贫血或红细胞增多症(5.7%)、消化系统疾病(5.4%)。晚期早产儿的住院时间为 5.1 ± 3.90 d,明显长于足月儿的 3.2 ± 1.61 d。他们发现,晚期早产儿的并发症发生率和病死率均高于足月儿。该研究人群中,妊娠高血压、贫血、胎膜早破和双胞胎是晚期早产儿发病率和病死率较高的主要原因。

9 结论

全球早产率增加主要是因为晚期早产儿的增加^[1]。毋庸置疑,与足月儿相比,晚期早产儿的发病率和病死率增高的风险较大。晚期早产儿属于一个特殊的婴儿群体(大自然未完成的杰作),自2006年以来(NICHD研讨会于2005年7月召开),这一群体才得到应有的认可。从那时起,关于晚

期早产儿的信息呈指数增长。然而,可用于监护这些晚期早产儿的信息仍然不是以证据为基础的。因此,需要进行大型多中心前瞻性研究来制订相关指南,并对专业医护人员进行教育,以便更好地向这一处于研究中的弱势且往往被忽视的群体提供监护。根据现有证据和专家意见,我们建议应提倡晚期早产儿的“特殊治疗”,包括识别风险因素、严密监测、采取预防策略、需要时提供最佳治疗、严格遵守出院标准、遵守严格但个性化的出院后随访方案。这种方法不仅有可能帮助专业医护人员提供所需的预见性和预防性指导和处理,而且也可以帮助我们节省一定的财力。鉴于晚期早产儿对社会造成的巨大影响,世界卫生组织和美国儿科学会已呼吁对这一易患病人群进行长期的评估、监测和随访^[1]。

(本文编辑:邓芳明)

· 消息 ·

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