

Studies Examine Sleep Problems in Pregnancy

BY SUSAN LONDON

SEATTLE — Sleep disturbances are exceedingly common among pregnant women, but it remains unclear to what extent they represent a normal part of pregnancy and how they may affect birth and maternal health outcomes, according to findings from two studies of nulliparous and multiparous women.

“Between 66% and 94% of pregnant women report pronounced changes to their sleep in the 9 months preceding delivery,” Leigh Signal, Ph.D., said at the annual meeting of the Associated Professional Sleep Societies.

Clinicians generally view these changes as normal, she noted. “It’s often a topic that doesn’t receive a great deal of attention in consultations with women, and they are rarely provided with strategies and guidance to help them improve their sleep across this time frame.”

Four factors seem to be responsible for sleep disturbances in pregnancy, according to Dr. Signal of Massey University in Wellington, New Zealand:

- ▶ Endocrine changes.
- ▶ Respiratory changes.
- ▶ Mechanical changes related to the increasing size of the fetus and uterus.
- ▶ Psychological factors such as worry about the pregnancy and birth.

In the first trimester of pregnancy, sleep disturbances are primarily a consequence of altered hormones, she noted. Rising progesterone levels are thought to increase daytime sleepiness, and the hormonal changes also trigger nausea, vomiting, and nocturia, all of which disturb sleep. In the second trimester, the main disruptions are movement of the fetus and possibly the onset of snoring resulting from increased nasal congestion, she said, although sleep and daytime sleepiness im-

prove from the preceding trimester.

Sleep disturbances are most common during the third trimester and stem from numerous causes, including nocturia, discomfort, shortness of breath, and heartburn. “Sleep efficiency declines, and wake [time] after sleep onset increases to approximately double that reported in prepregnancy,” she noted.

To further characterize sleep patterns in pregnancy and compare them by parity, Dr. Signal and her colleagues conducted a study among healthy pregnant New Zealand women—8 nulliparous women (mean age, 31 years) and 11 multiparous (mean age, 36 years) women. Sleep was assessed objectively with actigraphy and sleep diaries in midpregnancy (about 24 weeks’ gestation), in the week before delivery (38-40 weeks’ gestation), in the week after delivery, and at 6-7 weeks post partum.

In the study population overall, both time in bed and total sleep time varied significantly across the time points studied, she reported, with lowest values seen in the first week post partum (Aust. N. Z. J. Obstet. Gynaecol. 2007;47:16-22).

By parity, time in bed was greater among nulliparous women than among their multiparous counterparts at both midpregnancy and 6-7 weeks post partum, whereas the reverse was seen in the first week post partum.

But total sleep time did not differ according to parity at any time point. Dr. Signal noted that this lack of difference appeared to be due to comparatively poorer sleep efficiency and greater wake time after sleep onset in the nulliparous group.



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“Our results suggest that during pregnancy, although multiparous women do not spend as much time in bed as nulliparous women, when they do attempt to sleep, their sleep is more efficient,” she said.

In a second study, a pilot to one that will look at the influence of sleep on birth outcomes and maternal mood disorders, Dr. Signal’s team assessed sleep subjectively with questionnaires and phone interviews among 20 nulliparous women (mean age, 33 years) and 14 multiparous women (mean age, 36 years) in New Zealand. Sleep was assessed in the prepregnancy period (retrospectively), in late pregnancy (35-37 weeks’ gestation), at 3-4 weeks post partum, and at 12 weeks post partum.

In the study population overall, total sleep time in late pregnancy and at 12 weeks post partum was less than that before pregnancy. But there was no difference in this measure between prepregnancy and 3-4 weeks post partum.

“That was largely due to an increase in sleep time reported by nulliparous women,” she noted, which may help reconcile these findings with those from the earlier study showing reduced sleep in the

first week post partum. “It may be that in our sample, nulliparous women utilized the opportunity to recover from the severe sleep loss in the first week post partum at 3-4 weeks post partum.”

Both groups reported more good nights of sleep weekly before pregnancy and than at 12 weeks post partum, although the nulliparous group had more such nights to begin with. There was no difference in sleep quality between groups as

assessed by scores on the General Sleep Disturbance Scale.

Late in pregnancy, the factors most commonly cited as disturbing sleep often or always (on three or more nights a week) were bathroom visits (cited by 94% of women), discomfort (75%), and pain (59%). Of note, Dr. Signal said, nearly all women, 91%, reported more than one factor disturbing their sleep often or always, and fully 74% reported four or more.

“One point I want to make about sleep across pregnancy is the enormous individual variability in the data,” she commented. As far as the change in total sleep time from before pregnancy to late pregnancy, 21% of women had little change (18 minutes or less), 15% had an increase of 1 hour or more, and 64% had a decrease of 1 hour or more. “Some women manage to maintain their sleep across pregnancy,” she observed. “Understanding the difference between these women and those who have more extreme changes may help identify strategies that can be utilized to improve sleep.”

Dr. Signal reported that she had no relevant conflicts of interest. ■

Sleep Disturbances Linked to Adverse Perinatal Outcomes

BY SUSAN LONDON

SEATTLE — Sleep disturbances during pregnancy increase the risk of adverse perinatal outcomes, such as gestational diabetes and cesarean delivery, according to an overview of research presented at the annual meeting of the Associated Professional Sleep Societies.

“Sleep disturbances are common during pregnancy,” said Bilgay Izci Balserak, Ph.D., of the University of Glasgow (Scotland) Sleep Centre. “The majority of pregnant women experience some level of sleep disturbance, especially in the third trimester of pregnancy.”



A 2007 poll conducted by the National Sleep Foundation, Washington, found that 84% of pregnant women reported experiencing sleep problems at least a few nights per week, she noted. This compared with 67% of all women surveyed.

Altered sleep during pregnancy stems from a variety of hormonal, physiologic, and psychological factors, according to Dr. Balserak. These factors can affect sleep directly, as in the case of progesterone causing sedation,

or indirectly, as in the case of heartburn or nocturia causing awakenings. The sleep disturbances seen during pregnancy include both nocturnal perturbations (poor sleep quality, insomnia, and frequent awakenings) and daytime symptoms (fatigue and daytime sleepiness), she noted.

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DR. BALSERAK

Pregnancy-related changes can also trigger frank sleep disorders or exacerbate preexisting ones, such as restless legs syndrome, sleep-disordered breathing, and parasomnias. The acute sleep loss or fragmented sleep that results from sleep disturbances “can cause adverse perinatal outcomes,” she said.

Retrospective and prospective studies, for example, have shown that pregnant women with sleep-disordered breathing have a two- to fivefold increased risk of developing gestational diabetes after body mass index is taken into account (Am. J. Respir. Crit. Care Med. 2007;175:A996, and Sleep 2009;32:A320-1).

Other research has linked sleep disturbances to birth outcomes. For instance, compared with women with a total sleep time of at least 7 hours in late pregnancy, women with a total sleep time of less than 6 hours or

6-6.9 hours have sharply elevated odds of cesarean delivery (odds ratios, 4.5 and 3.7, respectively) (Am. J. Obstet. Gynecol. 2004;191:2041-6). Women sleeping less than 6 hours also have longer labor, on average, than those sleeping at least 7 hours (29 vs. 18 hours).

Several studies have found correlations between unfavorable sleep parameters in late pregnancy and elevated levels of depressive symptoms, both at that time and in the early postpartum period, she noted.

“Early recognition, management, and treatment of sleep disturbances are important to prevent adverse perinatal outcomes,” Dr. Balserak asserted. However, she added, there are currently no practice parameters when it comes to screening for and managing sleep disturbances during pregnancy.

“Regarding management, nonpharmacologic interventions should be considered as the first choice, including lifestyle modifications and cognitive behavioral therapy strategies,” she recommended. Providers should encourage women to adopt healthy lifestyle behaviors, such as daily exercise, that may improve sleep, Dr. Balserak said. And they should counsel women about measures to address specific symptoms disrupting sleep, such as modifying eating habits to reduce heartburn.

Dr. Balserak reported that she had no conflicts of interest. ■