Vouchers Can Help Pregnant Smokers Abstain

BY FRAN LOWRY

BOCA RATON, FLA. — Contingency management was effective as a strategy in helping pregnant women to stop smoking.

In a pilot study of pregnant women who continued to smoke cigarettes, 11 (37%) of 30 women who received contingency management achieved abstinence, compared with just 2 (10%) of 23 women who did not, Dr. Sarah Heil said in a report at the annual meeting of the American Academy of Addiction Psychiatry.

Women in both the contingent and noncontingent groups were seen every day for the first 5 days of the study. During this time, abstinence was based on a breath carbon monoxide level of 6 parts per million or less, said Dr. Heil of the University of Vermont, Burlington.

After the first 5 days, the women were seen according to the following schedule:

- Twice a week for 7 weeks.
- Once a week for the next 11 weeks.
- Once every other week until delivery.
- Once a week for the first 4 weeks post partum.
- Every other week for the next 8 weeks.

Abstinence in this phase of the study was assessed by measuring urine cotinine levels; levels of 80 ng/mL or less were indicative of abstinence.

The women were rewarded with vouchers, which were earned contingent on biochemically verified abstinence. The voucher value began at $6.25 and escalated at a rate of $1.25 per consecutive negative sample up to a maximum of $45.

"These vouchers are like having a bank account with us. We put their money into an account, and they are allowed to spend it on things we believe are appropriate. So there were a lot of gift certificates, paying of credit card bills, and shopping at Wal-Mart and grocery stores," Dr. Heil said.

Women who were randomized to noncontingency management got vouchers independent of their smoking status. The vouchers were a flat $11.50 per antepartum visit, and $20 per each postpartum visit.

The value began at $6.25 and escalated at a rate of $1.25 per negative sample up to a maximum of $45.

DR. HEIL

The participants had been smoking for about 8 years; most of them lived with other smokers. They smoked approximately one pack of cigarettes a day before pregnancy, but had reduced this amount by roughly 50% by the time they entered the study. Most of them had less than a high school education, and few were married.

To be considered abstinent at each time point, the women had to self-report that they had not had a cigarette—"not even a puff"—in the previous 7 days, as well as the appropriate urine cotinine level.

The effects obtained in the study persisted 3 months after delivery, and for a further 3 months, even though the voucher program was discontinued at 3 months post partum. This was true for women in the contingent and noncontingent groups, Dr. Heil said.

In addition, fetuses in the contingent group gained weight faster than did those in the noncontingent group. Fetal weight was estimated by measuring fetal length and abdominal circumference by ultrasound.

Cigarette smoking is the leading preventable cause of poor pregnancy outcomes in the United States. Placental abruptions, small gestational age, preterm and still birth, low birth weight, and increased risk for sudden infant death syndrome are all associated with cigarette smoking by the mother.

The adverse effects of smoking on the neonate cost $1,630/birth per year in 2008 dollars.

Dr. Heil said she hopes to extend her research on contingency management to include pregnant smokers who are also opioid dependent. ■