

# Paternal Adaptation Through the Course of the Partner's Pregnancy

Kathleen E. Ellsbury, MD, MSPH  
Seattle, Washington

The transition to fatherhood during the mother's pregnancy has not been well defined. Though the psychosocial changes of gravid women have been well studied,<sup>1-3</sup> the literature reveals little about the paternal adaptation to pregnancy. May<sup>4</sup> and Colman and Colman<sup>5</sup> described three phases of paternal adaptation, alluding to varying levels of paternal stress during course of pregnancy. Several other authors have focused on the increase in paternal stress during the course of the partner's pregnancy.<sup>6-11</sup> This study was based on the hypothesis that expectant fathers will report significantly different behavioral and physical changes at two different points of time during their partner's pregnancy.

## METHODS

During both the first and second halves of pregnancy, identical, confidential 50-item closed-ended questionnaires and demographic data forms were distributed to 157 expectant fathers whose partners were obtaining prenatal care in university-affiliated family medicine or obstetrics clinics in central Missouri. The questionnaire took approximately 15 minutes to complete and was first given to the expectant fathers some time before 20 weeks' gestation; 112 of the questionnaires were handed to the expectant mother or father during a prenatal visit and 45 were mailed. Stamped addressed envelopes and telephone reminders were utilized to increase response rate. A Fisher's two-tailed *t* test was used to compare mean scores for responses during early and late pregnancy.

## RESULTS

Of 157 questionnaires distributed during the first half of pregnancy, 75 (48 percent) were returned. Of these 75, 57 completed a second identical questionnaire later in the pregnancy. The mean age was 27.7 years (fathers) and 26.0 years (mothers). The mean duration of the partner relationship was 4.9 years. Ninety-two percent were married, 74 percent were college graduates, and 96 percent were white; 64 percent of the expectant mothers were nulliparous at the time of entry into the study.

Initial reaction to the news of the pregnancy was generally positive (happiness, fulfillment), with few fathers reporting reactions of surprise, worry, displeasure, or disbelief. The mean scores on the scales describing initial reactions did not change significantly during the pregnancy. The degree of change in paternal social and psychological function did not vary significantly over the course of the pregnancy (Table 1). The predominant changes were positive—anticipation of fatherhood, closeness to partner, feeling more "responsible," and better relationships with relatives. More negative adaptations, such as inability to relax, missing work, and moodiness, were also reported by many. Mean scores on physical symptom scales (Table 2) were highest for decreased sexual activity, hunger, and tiredness. Only the decrease in sexual activity showed a significant change over the course of the pregnancy—becoming more pronounced. Paternal involvement in physical preparations for the baby increased significantly in two categories during the course of the pregnancy: helping to select baby furniture (the proportion of men involved increased from 49 to 68 percent) and selection of baby clothing (increased from 37 to 58 percent during the course of the pregnancy).

## COMMENT

Results of this questionnaire study support many of the prior observations of those studying paternal involvement in pregnancy. The expectant fathers in this study generally

Submitted, revised, December 23, 1986.

From the Department of Family Medicine, University of Washington School of Medicine, Seattle, Washington. This research was conducted while the author was a Fellow in the Robert Wood Johnson Family Practice Program, University of Missouri—Columbia, Columbia, Missouri. Requests for reprints should be addressed to Dr. Kathleen E. Ellsbury, Department of Family Medicine, RF-30, University of Washington, Seattle, WA 98195.

**TABLE 1. PATERNAL SOCIAL AND PSYCHOLOGICAL FUNCTION DURING AS COMPARED WITH PRIOR TO PREGNANCY (MEAN SCORE)**

	First Half of Pregnancy (n = 57)	Second Half of Pregnancy (n = 57)	Two-tailed t test P Value
I'm happy about the idea of being a father	3.39	3.35	NS
I'm looking forward to becoming a father	3.14	3.32	NS
I feel closer to my partner	2.95	2.91	NS
I can't seem to relax	2.82	2.70	NS
I feel more responsible	2.79	2.95	NS
My partner wants to be taken care of	2.79	2.86	NS
I do more housework	2.46	2.42	NS
I miss work more often	2.42	2.44	NS
I get along better with my in-laws	2.18	2.19	NS
I get along better with my relatives	2.14	2.18	NS
My moods change more often	2.14	1.98	NS
I feel more sure of myself	2.12	2.30	NS
I get along better with people at work	2.09	2.24	NS
I put in more effort at work	2.04	2.14	NS
I have trouble keeping my mind on things at work	1.81	1.56	NS
Sometimes I feel a little jealous of my partner	1.37	1.19	NS

0 = strongly disagree 2 = neutral 4 = strongly agree

**TABLE 2. PATERNAL PHYSICAL SYMPTOMS DURING AS COMPARED WITH BEFORE PREGNANCY (MEAN SCORE)**

	First Half of Pregnancy (n = 57)	Second Half of Pregnancy (n = 57)	2-tailed t test P Value
Sexual activity	2.50	2.22	.02*
Hunger	2.34	2.34	NS
Tiredness	2.28	2.46	NS
Bowel problems	2.15	2.13	NS
Headaches	2.09	2.20	NS
Stomachache	2.09	2.16	NS
Nausea	2.05	2.11	NS
Vomiting	2.04	2.07	NS
Toothache	2.02	1.95	NS
Dizziness	1.96	2.04	NS
Chest pain	1.86	2.02	NS

\* Significant difference between early and late pregnancy,  $P < .05$

0 = much less, 4 = much more

reported a positive experience from the time of initial news of the pregnancy through the latter half of the pregnancy. The ambivalence of the pregnancy experience also is evident from the significant number who reported such feelings as surprise, worry, displeasure, and disbelief initially, and moodiness and inability to relax later in pregnancy.

There are several limitations to this study. Those who responded to the questionnaires may have differed significantly from the population at large. Those who dropped out of the study, however, did not differ significantly from those who completed the two identical questionnaires. The

study focused on a largely white population in a Midwestern area where findings may not be generalizable to other areas. The social desirability factor may have influenced respondents to respond positively on many items, particularly those dealing with sensitive such areas as the couple relationship.

The physical symptoms discussed by Trethowan<sup>10</sup> differed somewhat from those reported by the men in this study, with gastrointestinal symptoms and toothache less frequent and generalized symptoms such as hunger, tired-

continued on page 409

# In mild to moderate hypertension

## THE FIRST ONCE DAILY

### CALCIUM CHANNEL BLOCKER

#### ISOPTIN® SR (verapamil HCl/Knoll) 240 mg scored, sustained-release tablets

**CONTRAINDICATIONS:** 1) Severe left ventricular dysfunction (see WARNINGS), 2) Hypotension (less than 90 mmHg systolic pressure) or cardiogenic shock, 3) Sick sinus syndrome or 2nd or 3rd degree AV block (except in patients with a functioning artificial ventricular pacemaker).

**WARNINGS: Heart Failure:** ISOPTIN should be avoided in patients with severe left ventricular dysfunction (see DRUG INTERACTIONS). Patients with milder ventricular dysfunction should, if possible, be controlled before verapamil treatment. Hypotension: ISOPTIN (verapamil HCl) may produce occasional symptomatic hypotension. Elevated Liver Enzymes: Elevations of transaminases with and without concomitant elevations in alkaline phosphatase and bilirubin have been reported. Periodic monitoring of liver function in patients receiving verapamil is therefore prudent. Accessory Bypass Tract (Wolff-Parkinson-White): Patients with paroxysmal and/or chronic atrial flutter or atrial fibrillation and a coexisting accessory AV pathway have developed increased antegrade conduction across the accessory pathway producing a very rapid ventricular response or ventricular fibrillation after receiving intravenous verapamil. While this has not been reported with oral verapamil, it should be considered a potential risk. Treatment is usually D.C.-cardioversion. Atrioventricular Block: The effect of verapamil on AV conduction and the SA node may cause asymptomatic 1st degree AV block and transient bradycardia. Higher degrees of AV block, while infrequent (0.8%), may require a reduction in dosage or, in rare instances, discontinuation of verapamil HCl. Patients with Hypertrophic Cardiomyopathy (HSS): Although verapamil has been used in the therapy of patients with HSS, severe cardiovascular decompensation and death have been noted in this patient population.

**PRECAUTIONS: Impaired Hepatic or Renal Function:** Verapamil is highly metabolized by the liver with about 70% of an administered dose excreted in the urine. In patients with impaired hepatic or renal function verapamil should be administered cautiously and the patients monitored for abnormal prolongation of the PR interval or other signs of excessive pharmacological effects (see OVERDOSAGE).

**Drug Interactions:** Beta Blockers: Concomitant use of ISOPTIN and oral beta-adrenergic blocking agents may be beneficial in certain patients with chronic stable angina or hypertension, but available information is not sufficient to predict with confidence the effects of concurrent treatment in patients with left ventricular dysfunction or cardiac conduction abnormalities. Digitalis: Clinical use of verapamil in digitalized patients has shown the combination to be well tolerated if digoxin doses are properly adjusted. However, chronic verapamil treatment increases serum digoxin levels by 50 to 75% during the first week of therapy and this can result in digitalis toxicity. Upon discontinuation of ISOPTIN (verapamil HCl), the patient should be reassessed to avoid underdigitalization. Antihypertensive Agents: Verapamil administered concomitantly with oral antihypertensive agents (e.g., vasodilators, angiotensin-converting enzyme inhibitors, diuretics, beta blockers, prazosin) will usually have an additive effect on lowering blood pressure. Patients receiving these combinations should be appropriately monitored. Disopyramide: Disopyramide should not be administered within 48 hours before or 24 hours after verapamil administration. Quinidine: In patients with hypertrophic cardiomyopathy (HSS), concomitant use of verapamil and quinidine resulted in significant hypotension. There has been a report of increased quinidine levels during verapamil therapy. Nitrates: The pharmacologic profile of verapamil and nitrates as well as clinical experience suggest beneficial interactions. Cimetidine: Two clinical trials have shown a lack of significant verapamil interaction with cimetidine. A third study showed cimetidine reduced verapamil clearance and increased elimination to 1/2. Anesthetic Agents: Verapamil may potentiate the activity of neuromuscular blocking agents and inhalation anesthetics. Carbamazepine: Verapamil may increase carbamazepine concentrations during combined therapy. Rifampin: Therapy with rifampin may markedly reduce oral verapamil bioavailability. Lithium: Verapamil may lower lithium levels in patient on chronic oral lithium therapy. Carcinogenesis, Mutagenesis, Impairment of Fertility: There was no evidence of a carcinogenic potential of verapamil administered to rats for two years. Verapamil was not mutagenic in the Ames test. Studies in female rats did not show impaired fertility. Effects on male fertility have not been determined. Pregnancy (Category C): There are no adequate and well-controlled studies in pregnant women. ISOPTIN crosses the placental barrier and can be detected in umbilical vein blood at delivery. This drug should be used during pregnancy, labor, and delivery, only if clearly needed. Nursing Mothers: ISOPTIN is excreted in human milk, therefore, nursing should be discontinued while verapamil is administered. Pediatric Use: Safety and efficacy of ISOPTIN in children below the age of 18 years have not been established.

**ADVERSE REACTIONS:** Constipation 8.4%, dizziness 3.5%, nausea 2.7%, hypotension 2.5%, edema 2.1%, headache 1.9%, CHF/pulmonary edema 1.8%, fatigue 1.7%, bradycardia 1.4%, 3° AV block 0.8%, flushing 0.1%, elevated liver enzymes (see WARNINGS). The following reactions, reported in less than 1.0% of patients, occurred under conditions (open trials, marketing experience) where a causal relationship is uncertain; they are mentioned to alert the physician to a possible relationship: angina pectoris, arthralgia and rash, AV block, blurred vision, cerebrovascular accident, chest pain, claudication, confusion, diarrhea, dry mouth, dyspnea, ecchymosis or bruising, equilibrium disorders, exanthema, gastrointestinal distress, gingival hyperplasia, gynecomastia, hair loss, hyperkeratosis, impotence, increased urination, insomnia, macules, muscle cramps, myocardial infarction, palpitations, paresthesia, psychotic symptoms, purpura (vasculitis), shakiness, somnolence, spotty menstruation, sweating, syncope, urticaria. Treatment of Acute Cardiovascular Adverse Reactions: Whenever severe hypotension or complete AV block occur following oral administration of verapamil, the appropriate emergency measures should be applied immediately, e.g., intravenously administered isoproterenol HCl, levaterenol bitartrate, atropine (all in the usual doses), or calcium gluconate (10% solution). If further support is necessary, inotropic agents (dopamine or dobutamine) may be administered. Actual treatment and dosage should depend on the severity and the clinical situation and the judgment and experience of the treating physician.

**OVERDOSAGE:** Treatment of overdosage should be supportive. Beta-adrenergic stimulation or parenteral administration of calcium solutions may increase calcium ion flux across the slow channel, and have been used effectively in treatment of deliberate overdosage with verapamil. Clinically significant hypotensive reactions or fixed high degree AV block should be treated with vasopressor agents or cardiac pacing, respectively. Asystole should be handled by the usual measures including cardiopulmonary resuscitation.

Knoll Pharmaceuticals  
A Unit of BASF K&F Corporation  
Whippany, New Jersey 07981



BASF Group  
©1986, BASF K&F Corporation

2474/11/86

Printed in U.S.A.

continued from page 408

ness, and headache more frequent in this study than in Trethowan's study.

As the pregnancy progresses, the paternal experience appears to change in few respects. Increased paternal involvement in physical preparations for the baby (clothes and furniture selection) are understandable as the need for such involvement increases. Decreased sexual activity, as discussed by others,<sup>11,12</sup> was reported by many men in this study. The stability of responses between early and late pregnancy suggests that paternal emotional adjustment and physical symptoms present in early pregnancy will likely continue to be present later in pregnancy, and that an early assessment of paternal adjustment will predict adjustment later in the pregnancy.

### References

- Smilkstein G, Hesper-Lucas A, Ashworth C, et al: Prediction of pregnancy complications: An application of the biopsychosocial model. *Soc Sci Comp Med* 1984; 18:315-321
- Norbeck JS, Tilden VP: Life stress, social support, and emotional disequilibrium in complications of pregnancy: A prospective, multivariate study. *J Health Soc Behav* 1983; 24:30-46.
- Laukaran VH, van den Berg BJ: The relationship of maternal attitude to pregnancy outcomes and obstetric complications: A cohort study of unwanted pregnancy. *Am J Obstet Gynecol* 1980; 136:374-379
- May KA: Three phases of father involvement in pregnancy. *Nurs Res* 1982; 31:337-342
- Colman AD, Colman L: Pregnancy: The Psychological Experience. New York, Herder & Herder, 1972, pp. 96-143
- Liebenburg B: Expectant fathers. *Child Family, Summer*, 1969, pp 264-267
- Wapner J: The attitudes, feelings and behaviors of expectant fathers attending Lamaze classes. *Birth Family* 1976; 3(1):5-13
- Williamson P, English E: Stress and coping in first pregnancy: Couple-family physician interaction. *J Fam Pract* 1981; 13:629-635
- Dodendorf DM: Expectant fatherhood and first pregnancy. *J Fam Pract* 1981; 13:744-751
- Trethowan WH: The couvade syndrome—Some further observations. *J Psychosom Res* 1968; 12:107-115
- Curtis JA: A psychiatric study of 55 expectant fathers. *US Armed Forces Med J* 1955; 6:947-951