Practice Issues

What Is New in Bed Rest in Pregnancy?
Best Articles From the Past Year

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This month, we focus on current research in bed rest in pregnancy. Dr. Lorenz discusses four recent publications, and each is concluded with a “bottom line” that is the take-home message. The complete reference for each can be found in Box 1 on this page, along with direct links to the abstracts.

(Activity Restriction Among Women With a Short Cervix)
This is a secondary analysis of a Maternal-Fetal Medicine Units Network randomized study of 17α-hydroxyprogesterone caproate for prevention of preterm birth in nulliparous patients with a singleton pregnancy and a short cervix (less than 30 mm). Of 646 patients, 39% were assigned to activity restrictions and compared with those without restrictions. Activity restriction was the choice of the physician. The activity-restricted patients were older, had shorter cervices, and had more funneling and intra-amniotic debris. The risk of preterm birth before 37 weeks of gestation was higher in the activity-restricted group (37% compared with 17%, P<.001). After adjustment for confounding variables, the adjusted odds ratio with activity restriction was 2.37 (95% confidence interval 1.6–3.53). Results were similar for risk of preterm birth before 34 weeks.

(Therapeutic” Bed Rest in Pregnancy: Unethical and Unsupported by Data)
The authors reviewed the evidence in randomized trials of benefits of bed rest for treatment of threatened abortion (two trials, 64 patients), hypertension (four trials, 449 patients), prevention of preeclampsia (two trials, 106 patients), preterm birth in singleton gestations (one trial, 1,266 patients), preterm birth in multiple gestations (seven trials, 713 patients), and impaired fetal growth (one trial, 107 patients). For every diagnosis, the conclusion is no benefit. Risks include a relative risk of 19 (95% confidence interval 5–80) for thromboembolism with bed rest compared with pregnancy without restrictions. The authors also reviewed evidence for adverse effects on bone demineralization (4.6% for bed rest compared with 1.6% for normal pregnancy), muscle conditioning, pulmonary aeration, psychological distress, and family stress. Given the absence of evidence of benefit coupled with the documented adverse effects, the authors argue that the ethical principles of

Box 1. Abstracts Discussed in This Commentary


Bottom Line: In patients with a short cervix and singleton gestation, activity restriction does not decrease, and may increase, the risk of preterm birth.

“Therapeutic” Bed Rest in Pregnancy: Unethical and Unsupported by Data
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autonomy, beneficence, nonmaleficence, and justice are the basis for the conclusion that prescribing bed rest in pregnancy as therapy is unethical. The recommendation is that it should be limited to investigational trials.

**Bottom Line:** Because bed rest has no benefit and proven harm, the authors state that therapeutic use of bed rest is unethical and should be limited to investigational trials with informed consent.

**Lack of Evidence for Prescription of Antepartum Bed Rest**

This extensive review of the literature addresses the adverse effects of activity restriction. The mechanisms of “reduced hydrostatic gradients,” “headward fluid shift,” and “reduced loading and disuse of weight-bearing” muscles have adverse effects on 1) the cardiovascular and cardiopulmonary systems, including “headward shift of leg fluid, redistribution of circulating blood, altered pulmonary function and gas exchange, altered heart function and size, altered blood pressure function, altered microcirculatory function and peripheral tone, reduced orthostatic tolerance, reduced maximal exercise capacity, decreased red blood cell mass, decreased plasma volume, decreased lower body function; 2) musculoskeletal: altered body metabolism, muscle atrophy, altered muscle metabolism, altered muscle function, bone demineralization, altered calcium metabolism and calcitropic hormones; 3) fluid and electrolyte: altered renal hemodynamics, altered endocrine secretion, altered urine flow and composition, loss of intracellular fluids and salts, and loss of body water and salts.” Adverse fetal effects include lower birth weight. Adverse psychosocial effects include “depressive symptoms, anxiety, increased stress, time elongation, boredom, sense of being a prisoner, family stress and role alterations, financial difficulties, lack of control, concern for maternal and fetal wellbeing, worry about family at home, separation from family, paternal difficulties.”

**Bottom Line:** This detailed review shows how activity restriction does harm. First do no harm.

**Bed Rest in Pregnancy: Time to Put the Issue to Rest**

This editorial accompanied the articles by Grobman and McCall. Ninety-five percent of obstetricians prescribe bed rest, affecting an estimated 800,000 women annually. Given the increased attention to short cervix as a risk factor for preterm birth, the annual number may rise substantially. The estimate of annual costs of antepartum activity restriction is $2-7 billion. Among maternal-fetal medicine specialists, 76% believe that there is limited or no evidence showing benefit of activity restriction for arrested preterm labor, but 71% prescribe it. For preterm premature rupture of membranes, 56% of maternal-fetal medicine specialists surveyed believe that there is limited or no evidence showing benefit, but 87% prescribe it. Possible reasons that bed rest is so widely recommended include fear of a bad outcome after no intervention, anecdotal successes, and a belief that it is safe and inexpensive. The author recommends that physicians consider the evidence of risk compared with benefit when contemplating the use of activity restriction. There is a need for “methodologically sound clinical trials to put the issues surrounding activity restriction and bed rest to bed once and for all.”

**Bottom Line:** Most physicians prescribe activity restriction, most believe it does not work. It costs $2-7 billion and affects almost 1 million families annually.

**REFERENCES**
