Impact of subclinical hypothyroidism in women with recurrent early pregnancy loss

Lia A. Bernardi, M.D.,[a,b] Ronald N. Cohen, M.D.,[c] and Mary D. Stephenson, M.D., M.Sc.[a,b]

[a] University of Chicago Recurrent Pregnancy Loss Program, Department of Obstetrics and Gynecology, University of Chicago, [b] Department of Obstetrics and Gynecology, University of Illinois, and [c] Department of Internal Medicine, University of Chicago, Chicago, Illinois

Objective: To assess the impact of subclinical hypothyroidism (SCH) in women with recurrent early pregnancy loss (REPL).
Design: Observational cohort study.
Setting: REPL program in an academic medical center.
Patient(s): 286 women with a history of ≥ 2 pregnancy losses <10 weeks.
Intervention(s): From 2004–2007, no treatment for women with SCH (thyroid-stimulating hormone [TSH] >2.5 mIU/L with a normal free thyroxine or free thyroxine index); from 2008 onward, levothyroxine treatment prepregnancy to maintain TSH ≤ 2.5 mIU/L.
Main Outcome Measure(s): Live-birth rate (LBR).
Result(s): The prevalence of SCH was 55 (19%) of 286 in this REPL cohort. The cumulative LBR was 27 (69%) of 39 for women with SCH versus 104 (74%) of 141 for euthyroid women. The per-pregnancy LBR was 34 (49%) of 69 for SCH versus 129 (58%) of 221 for euthyroid women. When the LBR was compared between treated and untreated SCH, the cumulative LBR was 17 (71%) of 24 versus 10 (67%) of 15, respectively. The per-pregnancy LBR for SCH treated versus untreated women was 22 (48%) of 46 versus 12 (52%) of 23, respectively.
Conclusion(s): Although there was a high prevalence of SCH in the REPL cohort, there was no statistically significant difference in the subsequent live-birth rate when comparing women with SCH and euthyroid women, or treated and untreated SCH. (Fertil Steril® 2013;100:1326–31. ©2013 by American Society for Reproductive Medicine.)
Key Words: Euthyroid, pregnancy, recurrent miscarriage, recurrent pregnancy loss, subclinical hypothyroidism

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Recurrent early pregnancy loss (REPL), defined as two or more pregnancy losses before 10 weeks of gestation (1), is estimated to impact approximately 5% of couples who achieve pregnancy (2). This reproductive disorder has devastating physical and emotional consequences.

The most common causes of early (<10 weeks) pregnancy loss are numeric chromosome errors, such as trisomy, monosomy, and polyploidy, which generally occur on a random basis, meaning that the risk of subsequent miscarriage is not increased. In accordance with the 2012 American Society for Reproductive Medicine guidelines on recurrent pregnancy loss (3), evaluation may be instituted after the second rather than the third miscarriage, although this change in practice will be associated with a significant increase in health-care costs. A decision analytic model by Bernardi et al. (4) compared the cost of a selective recurrent pregnancy loss (RPL) evaluation, defined as RPL evaluation if the second miscarriage is euploid, versus universal RPL evaluation, defined as RPL evaluation after the second miscarriage. The model demonstrated that selective RPL evaluation would result in substantial health-cost savings while ensuring that women with a higher risk of further euploid miscarriage would be appropriately evaluated.

The standard REPL evaluation includes a thorough history and physical examination, an assessment of the uterine cavity, and testing for thyroid function, hyperprolactinemia, diabetes, and antiphospholipid antibodies (1, 3). Cytogenetic analysis of both partners may identify a structural chromosome rearrangement. An endometrial biopsy may identify chronic endometritis or based on molecular markers may find abnormal endometrial development, although this testing is still considered

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Reprint requests: Mary D. Stephenson, M.D., M.Sc., University of Illinois at Chicago, 820 S. Wood Street, MC 808, Chicago, Illinois 60612 (E-mail: msteph@uic.edu).

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