



# Clinical efficacy of therapeutic intervention for subclinical hypothyroidism during pregnancy

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**ABSTRACT.** This study explored the effects of levothyroxine (L-T4) replacement therapy on pregnancy outcomes in patients with subclinical hypothyroidism (SCH). We analyzed the effects on pregnancy outcomes with respect to gestational week when the desired thyroid-stimulating hormone (TSH) level was reached as well as the length of time required to reach the target level during L-T4 treatment. This study enrolled 457 patients diagnosed with SCH upon initial thyroid function screening. Subjects were assigned to the treatment group (N = 184), and the control group (N = 273). Two variables were analyzed in the treatment group: the gestational week when the target TSH level was achieved and the length of time required to reach the target level during treatment. Based on these criteria, the treatment group was further divided into subgroups, including three subgroups based on the time required to reach target levels (<4 weeks, 4-8 weeks, and >8 weeks) and gestational week when the target TSH level was

achieved (before the 12th, between the 12th-28th, and after the 28th gestational week). The overall risk of complications in the control group was significantly higher than in the treatment group ( $P < 0.05$ ). After L-T4 treatment, the incidences of premature rupture of fetal membranes (PROM), gestational diabetes mellitus, fetal macrosomia, and postpartum hemorrhage in the group with treatment duration  $<4$  weeks were significantly lower than those in the groups with 4-8 and  $>8$  weeks treatment duration ( $P < 0.05$ ). L-T4 treatment can significantly reduce the risks of adverse pregnancy outcomes in pregnant women with SCH. The shorter the treatment duration required to reach the target TSH level and the earlier the gestational week when the target TSH level is achieved through treatment, the lower the incidence of complications.

**Key words:** Subclinical hypothyroidism; Levothyroxine; L-T4; Pregnancy outcomes