

## Oral L-carnitine and pregnancy: real opportunity for narcoleptic women?

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We read with great interest the case by Barros et al.<sup>1</sup> who described a young female with narcolepsy type 1 who replaced escitalopram (20 mg per day) and modafinil (400 mg per day) with L-carnitine 510 mg/d during pregnancy. The previous treatment induced a quite improvement of somnolence (Epworth Sleepiness Scale score 23/24 to 19/24) and cataplexy (10 episodes/d to 2 episodes per week). During pregnancy, L-carnitine induced a mild improvement of ESS score (20/24) and cataplexy (ten episodes per month). The authors stated that the patient had a good outcome, delivery and breastfeeding were without complications. We previously described a case of narcolepsy type 2, who started oral L-carnitine therapy up to 500 mg b.i.d.<sup>2</sup>. The patient obtained sustained objective (MSLT) and subjective (ESS) improvement until 6-month follow up after the delivery. Pregnancy is considered a physiological condition of L-carnitine deficiency<sup>3</sup> and its use during pregnancy is safe and may ameliorate pregnancy outcome<sup>4</sup>. In particular L-carnitine deficiency is involved during pregnancy in the state of resistance to the anorectic and thermogenic actions of hypothalamic cellular signals of energy surplus, which, added to refractoriness to leptin effects, likely contributes to gestational hypersomnia, hyperphagia, and obesity<sup>3</sup>. The same key areas and similar clinical symptoms were also reported in narcolepsy<sup>5,6</sup>. Low serum level acylcarnitine were described in narcolepsy, and L-carnitine supplementation may reduce sleepiness<sup>7,8</sup>. The partial improvement of ESS reported by Barros et al.<sup>1</sup> may be explained by a low dose of L-carnitine compared to our case (510 mg/d vs. 1000 mg/d)<sup>2</sup>. Since narcolepsy treatment during pregnancy is challenging<sup>9</sup>, L-carnitine may represent a safe and effective treatment, although randomized controlled-study should confirm its efficacy on sleepiness and cataplexy and effective and safe dosages in larger sample.

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