INTRODUCTION

Intrauterine growth restriction (IUGR) is one of the most prevalent causes of fetal morbidity and mortality. Even though numerous studies intended to find a therapy for IUGR, no standard therapy has been established so far. For that purpose, intrauterine nutritional therapy in an IUGR rabbit model was evaluated in this study aiming to explore its effects on survival and birth weight.

METHODS

IUGR was surgically induced in pregnant rabbits (n=34) at gestational age 25 by ligating 40-50% of uteroplacental vessels that irrigate each gestational sac. At the same moment, fetal injections of Total Parenteral Nutrition solution (TPN) was administered into the amniotic sac of IUGR fetuses (n=106) in one horn (treated IUGR animals), whereas sham injection was performed in the fetuses (n=118) in the contralateral horn (non-treated IUGR group). Control group was established by performing sham injections to the fetuses (n=115) in one horn without ligating uteroplacental vessels. Five days after, a cesarean section was performed obtaining treated, non-treated IUGR animals and controls (Figure 1).

RESULTS

• Overall, survival rate of treated IUGR animals were significantly higher than the non-treated IUGR animals (Figure 2).
• Regarding birth weight, non-treated IUGR animals presented a significant reduction compared to controls. However, no statistical differences were observed between treated vs non-treated IUGR animals (Figure 3).

CONCLUSIONS

The data suggests that intra-amniotically administered TPN solution to intrauterine restricted animals could increase the survival rate of the IUGR animals, specially improving it in those real severe restricted animals, with no difference in birth weight.