



RESEARCH TOPIC CL16

“NutriPregLoss” study: Impact of nutrition on recurrent pregnancy loss

Clinical Unit name

Centro Multidisciplinare di Patologia Ostetrica
Humanitas San Pio X

Supervisor

Nicoletta Di Simone
nicoletta.disimone@hunimed.eu

Abstract

Recurrent pregnancy loss (RPL), defined as 2 or more spontaneous abortions, affects 5% of couples trying to conceive. Several factors (including diet, antibiotic intake and lifestyle) can determine a condition of intestinal dysbiosis and consequent chronic systemic inflammation which is hypothesized to have an impact on the correct implantation of the blastocyst and the outcome of the pregnancy. Characterizing the microbiota and eating habits in RPL patients will allow for a personalized diagnosis. Further, we aim to restore a condition of intestinal and genital eubiosis through a nutritional intervention, with the ultimate goal of improving pregnancy outcomes.

The study includes the following clinical and research activities:

- Characterization of the oral, intestinal, vaginal and endometrial microbiota and metaboloma;
- Characterization of the peripheral immune activation;
- Evaluation of a possible association between dysbiosis and oral, intestinal, genital and systemic inflammation;
- Evaluation of the impact of a nutritional intervention on the restoration of intestinal/genital eubiosis and on the pregnancy outcomes.

Scientific references

- [1] H. El Hachem, V. Crepaux, P. May-Panloup, P. Descamps, G. Legendre, and P. E. Bouet, “Recurrent pregnancy loss: Current perspectives,” *Int. J. Womens. Health*, vol. 9, pp. 331–345, 2017, doi: 10.2147/IJWH.S100817.
- [2] R. Bender Atik et al., “ESHRE guideline: recurrent pregnancy loss,” *Hum. Reprod. Open*, vol. 2018, no. 2, pp. 1–12, 2018, doi: 10.1093/hropen/hoy004.
- [3] T. Practice and R. Medicine, “Evaluation and treatment of recurrent pregnancy loss: A committee opinion,” *Fertil. Steril.*, vol. 98, no. 5, pp. 1103–1111, 2012, doi: 10.1016/j.fertnstert.2012.06.048.

- [4] A. M. Kolte et al., “Terminology for pregnancy loss prior to viability: A consensus statement from the ESHRE early pregnancy special interest group,” *Hum. Reprod.*, vol. 30, no. 3, pp. 495–498, 2015, doi: 10.1093/humrep/deu299.
- [5] M. M. Van Dijk et al., “Recurrent pregnancy loss: Diagnostic workup after two or three pregnancy losses? A systematic review of the literature and meta-analysis,” *Hum. Reprod. Update*, vol. 26, no. 3, pp. 356–367, 2020, doi: 10.1093/humupd/dmz048.
- [6] T. Chard, “11 Frequency of implantation and early pregnancy loss in natural cycles,” *Baillieres. Clin. Obstet. Gynaecol.*, vol. 5, no. 1, pp. 179–189, 1991, doi: 10.1016/S0950-3552(05)80077-X.
- [7] A. Adolfsson and P. G. Larsson, “Cumulative incidence of previous spontaneous abortion in Sweden in 1983-2003: A register study,” *Acta Obstet. Gynecol. Scand.*, vol. 85, no. 6, pp. 741–747, 2006, doi: 10.1080/00016340600627022.
- [8] E. Hemminki and E. Forssas, “Epidemiology of miscarriage and its relation to other reproductive events in Finland,” *Am. J. Obstet. Gynecol.*, vol. 181, no. 2, pp. 396–401, 1999, doi: 10.1016/S0002-9378(99)70568-5.
- [9] N. D. Almeida, O. Basso, M. Abrahamowicz, R. Gagnon, and R. Tamblyn, “Risk of miscarriage in women receiving antidepressants in early pregnancy, correcting for induced abortions,” *Epidemiology*, vol. 27, no. 4, pp. 538–546, 2016, doi: 10.1097/EDE.0000000000000484.
- [10] L. Ammon Avalos, C. Galindo, and D. K. Li, “A systematic review to calculate background miscarriage rates using life table analysis,” *Birth Defects Res. Part A - Clin. Mol. Teratol.*, vol. 94, no. 6, pp. 417–423, 2012, doi: 10.1002/bdra.23014.

Type of contract

PhD scholarship of € 22.400 gross per year awarded by Humanitas University. This sum is exempt from IRPEF income tax according to the provisions of art. 4 of Law no. 476 of 13th August 1984, and is subject to social security contributions according to the provisions of art. 2, section 26 and subsequent sections, of Law no. 335 of 8th August 1995 and subsequent modifications.

Borsa di dottorato pari a € 22.400 annui lordi erogata da Humanitas University. Importo non soggetto a tassazione IRPEF a norma dell’art. 4 della L. 13 agosto 1984 n. 476 e soggetto, in materia previdenziale, alle norme di cui all’art. 2, commi 26 e segg., della L. 8 agosto 1995, n. 335 e successive modificazioni.