

Dear Reviewer 2,

We would like to resubmit our manuscript entitled “The possibility of using bioelectrical impedance analysis in pregnant and postpartum women”. We appreciate your valuable remarks and hope that the quality of our manuscript is going to meet your expectations now that we have made some suggested alternations.

We have rearranged our paper in accordance with your valuable comments and suggestions. The manuscript has been checked by a native-speaker.

This review by Obuchowska et al. described and discussed the application of bioelectrical impedance analysis in pregnant and postpartum women.

This review was well written. However, some recently published literature should also be cited. For instance, Bai M, Susic D, O'Sullivan AJ, Henry A. Reproducibility of Bioelectrical Impedance Analysis in Pregnancy and the Association of Body Composition with the Risk of Gestational Diabetes: A Substudy of MUMS Cohort. J Obes. 2020;2020:3128767; Hashimoto S, Maoka T, Yamamoto R, et al. Comparison of bioelectrical impedance analysis in healthy pregnant women and patient on hemodialysis. Ther Apher Dial. 2021;25(2):160-165. doi:10.1111/1744-9987.13530

Thank you very much for finding the time to read our manuscript. Thank you for considering our manuscript. We agree that these publications by Bai et al. and Hashimoto et al. are very important and valuable. In the current version we added them in references and we have expanded manuscript as follows:

Lines 42-45:

“In the study of Bai et al., an excellent test repeatability throughout pregnancy has been demonstrated [13]. In spite of this, different bioimpedance measuring devices should not be used interchangeably [13].”

Lines 137-148:

“Hashimoto et al. compared the impedance analysis in healthy women and in women undergoing haemodialysis whose management of bodily fluids during pregnancy is known to be complicated [35]. Since radiographic examination for the evaluation of cardiothoracic ratio cannot be performed in pregnant women, the alternative use of BIA facilitates the measurement of body fluid volume and setting the corresponding dry weight during dialysis. According to recent studies, the live birth rate is gradually increasing as dialysis therapy advances [77,78]. That is why it is essential that the course of dialysis should be adjusted to each patient. Regardless of the course of pregnancy, the pre-dialysis levels of TBW and ICW in the pregnant woman on dialysis revealed no significant alterations. During the course of pregnancy, ECW tended to rise modestly. FFM, TBW and ECW all increased throughout late pregnancy [35].”

Lines 168-173:

“From early to late pregnancy, the rate of fat accumulation was comparable [13]. [...] However, during pregnancy, the mean percentage of TBW decreases [13]. Overweight or obese women present significantly lower percentages of TBW. Body fat percentage (BFP), FM and TBW have been observed to be considerably greater in obese women [13].”

Lines 199-200:

“The mean BFP varies significantly during pregnancy [13].”

References:

13. Bai M, Susic D, O'Sullivan AJ, Henry A. Reproducibility of Bioelectrical Impedance Analysis in Pregnancy and the Association of Body Composition with the Risk of Gestational Diabetes: A Substudy of MUMS Cohort. *J Obes.* **2020**, 2020.
35. Hashimoto, S.; Maoka, T.; Yamamoto, R.; Kawashima, K.; Nishikawa, A.; Sakurada, K.; Koike, T.; Shigematsu, T. Comparison of Bioelectrical Impedance Analysis in

Healthy Pregnant Women and Patient on Hemodialysis. *Ther. Apher. Dial.* **2021**, *25*, 160–165.

77. Piccoli, G. B.; Minelli, F.; Versino, E.; Cabiddu, G.; Attini, R.; Vigotti, F. N.; Rolfo, A.; Giuffrida, D.; Colombi, N.; Pani, A.; Todros, T. Pregnancy in Dialysis Patients in the New Millennium: A Systematic Review and Meta-Regression Analysis Correlating Dialysis Schedules and Pregnancy Outcomes. *Nephrol. Dial. Transplant.* **2016**, *31*, 1915–1934.

78. Sachdeva, M.; Barta, V.; Thakkar, J.; Sakhiya, V.; Miller, I. Pregnancy Outcomes in Women on Hemodialysis: A National Survey. *Clin. Kidney J.* **2017**, *10*, 276–281.

After reviewing the available literature again, we included some additional references:

15. Lee, S. Y.; Gallagher, D. Assessment Methods in Human Body Composition. *Curr. Opin. Clin. Nutr. Metab. Care* **2008**, *11*, 566–572.

49. Kimber-Trojnar, Ż.; Patro-Małyśza, J.; Trojnar, M.; Darmochwał-Kolarz, D.; Oleszczuk, J.; Leszczyńska-Gorzelak, B. Umbilical Cord SFRP5 Levels of Term Newborns in Relation to Normal and Excessive Gestational Weight Gain. *Int. J. Mol. Sci.* **2019**, *20*, 595.

77. Piccoli, G. B.; Minelli, F.; Versino, E.; Cabiddu, G.; Attini, R.; Vigotti, F. N.; Rolfo, A.; Giuffrida, D.; Colombi, N.; Pani, A.; Todros, T. Pregnancy in Dialysis Patients in the New Millennium: A Systematic Review and Meta-Regression Analysis Correlating Dialysis Schedules and Pregnancy Outcomes. *Nephrol. Dial. Transplant.* **2016**, *31*, 1915–1934.

78. Sachdeva, M.; Barta, V.; Thakkar, J.; Sakhiya, V.; Miller, I. Pregnancy Outcomes in Women on Hemodialysis: A National Survey. *Clin. Kidney J.* **2017**, *10*, 276–281.

79. Valensise, H.; Andreoli, A.; Lello, S.; Magnani, F.; Romanini, C.; De Lorenzo, A. Multifrequency Bioelectrical Impedance Analysis in Women with a Normal and Hypertensive Pregnancy. *Am. J. Clin. Nutr.* **2000**, *72*, 780–783.

80. Morita, H.; Takeuchi, K.; Funakoshi, T.; Mizutori, M.; Maruo, T. Potential Use of Bioelectrical Impedance Analysis in the Assessment of Edema in Pregnancy. *Clin. Exp. Obstet. Gynecol.* **1999**, *26*, 151–154.

81. Zhang, R.Y.; Wang, L.; Zhou, W.; Zhong, Q.M.; Tong, C.; Zhang, T.; Han, T.L.; Wang, L.R.; Fan, X.; Zhao, Y.; Ran, R.T.; Xia, Y.Y.; Qi, H.B.; Zhang, H.; Norris, T.; Baker, P.N.; Saffery, R. Measuring Maternal Body Composition by Biomedical Impedance Can Predict Risk for Gestational Diabetes Mellitus: A Retrospective Study among 22,223 Women. *J. Matern. Fetal Neonatal Med.* **2020**, *0*, 1–8.
83. Deurenberg, P.; Bhaskaran, K.; Lian, P.L.K. Singaporean Chinese Adolescents Have More Subcutaneous Adipose Tissue than Dutch Caucasians of the Same Age and Body Mass Index. *Asia Pac. J. Clin. Nutr.* **2003**, *12*, 261–265.
84. Gallagher, D.; Heymsfield, S.B.; Heo, M.; Jebb, S.A.; Murgatroyd, P.R.; Sakamoto, Y. Healthy Percentage Body Fat Ranges: An Approach for Developing Guidelines Based on Body Mass Index. *Am. J. Clin. Nutr.* **2000**, *72*, 694–701.
85. Wells, J.C.K.; Fewtrell, M.S. Measuring Body Composition. *Arch. Dis. Child.* **2006**, *91*, 612–617.
86. Vitale, S.G.; Corrado, F.; Caruso, S.; Benedetto, A.D.; Giunta, L.; Cianci, A.; D’Anna, R. Myo-Inositol Supplementation to Prevent Gestational Diabetes in Overweight Non-Obese Women: Bioelectrical Impedance Analysis, Metabolic Aspects, Obstetric and Neonatal Outcomes – a Randomized and Open-Label, Placebo-Controlled Clinical Trial. *Int. J. Food Sci. Nutr.* **2021**, *72*, 670–679.
87. Zhao, Y.N.; Li, Q.; Li, Y.C. Effects of Body Mass Index and Body Fat Percentage on Gestational Complications and Outcomes. *J. Obstet. Gynaecol. Res.* **2014**, *40*, 705–710.
88. Briesse, V.; Voigt, M.; Wisser, J.; Borchardt, U.; Straube, S. Risks of Pregnancy and Birth in Obese Primiparous Women: An Analysis of German Perinatal Statistics. *Arch. Gynecol. Obstet.* **2011**, *283*, 249–253.
89. Henson, M.C.; Castracane, V.D. Leptin in Pregnancy. *Biol. Reprod.* **2000**, *63*, 1219–1228.
92. Kwon, E.J.; Kim, Y.J. What Is Fetal Programming?: A Lifetime Health Is under the Control of in Utero Health. *Obstet. Gynecol. Sci.* **2017**, *60*, 506–519.
93. Kopp, W. How Western Diet and Lifestyle Drive the Pandemic of Obesity and Civilization Diseases. *Diabetes Metab. Syndr. Obes. Targets Ther.* **2019**, *12*, 2221–2236.
94. Kopp, W. Development of Obesity: The Driver and the Passenger. *Diabetes Metab. Syndr. Obes. Targets Ther.* **2020**, *13*, 4631–4642.
95. Marciniak, A.; Patro-Małyśza, J.; Kimber-Trojnar, Ż.; Marciniak, B.; Oleszczuk, J.; Leszczyńska-Gorzela, B. Fetal Programming of the Metabolic Syndrome. *Taiwan. J. Obstet. Gynecol.* **2017**, *56*, 133–138.

96. Paknahad, Z.; Fallah, A.; Moravejolahkami, A.R. Maternal Dietary Patterns and Their Association with Pregnancy Outcomes. *Clin. Nutr. Res.* **2019**, *8*, 64–73.

We would like to take this opportunity to thank you for all the valuable and highly perceptive remarks which have definitely made a substantial contribution to the quality of our paper.

Yours faithfully,

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