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The Obstetric Outcomes of Obese Primigravida with Spontaneous Onset of Labour at Term
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Abstract

INTRODUCTION: Obesity has reached pandemic level with higher prevalence among women. Obese pregnant women have higher risk of comorbidities, maternal and fetal complications. This study aimed to determine the prevalence of vaginal delivery and pregnancy outcomes of obese primigravida presented with spontaneous labour at term. MATERIALS AND METHOD: This prospective cohort study was conducted in a tertiary hospital in Perak involving 250 obese primigravida (BMI ≥ 27.5 kg/m²) and 250 non-obese primigravida. Data was collected from August 2020 till January 2021 and analyzed using descriptive statistics, independent T-test and Mann-Whitney U test by SPSS version 23.0. RESULTS: Our study found that there were no significant differences in the proportion of vaginal delivery and caesarean delivery between obese and non-obese primigravida [72.0% vs. 78% (vaginal delivery) and 28% vs. 22% (caesarean delivery)] with spontaneous onset of labour at term. No difference in complications of labour such as PPH and OASIS ($p=0.187$), with high successful delivery without complications. Obese women presented with cervical dilatation of 4cm had longer delivery interval [5.82(2.97) vs. 4.75(2.71), $p=0.013$] but shorter delivery interval at 6cm [2.41(1.58) vs. 3.61(1.78), $p=0.026$] compared to non-obese. They also had higher caesarean rate indicated for abnormal labour progress [28(71.8) vs. 11(28.2), $p=0.019$] and higher comorbidities [149(72.3) vs. 57(27.7), $p<0.001$]. There was no difference in the fetal outcome ($p=0.311$). CONCLUSION: After careful selection, both obese and non-obese women with spontaneous labour at term had similar risks of labour augmentation, duration of active labour, emergency caesarean delivery, PPH and OASIS despite higher comorbidities among the obese women © 2022, IJUM Medical Journal Malaysia.All Rights Reserved.

Author Keywords

Obese primigravida; Obstetric outcome; Spontaneous labour

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References

- (2021) *WHO 6 Facts on Obesity: who*,
1. WHO. [updated 09/06/2021]
- Kaplan-Sturk, R, Åkerud, H, Volgsten, H, Hellström-Westas, L, Wiberg-Itzel, E.
Outcome of deliveries in healthy but obese women: obesity and delivery outcome
(2013) *BMC Res Notes*, 6, p. 50.
2
- Dalbye, R, Gunnes, N, Blix, E, Zhang, J, Eggebø, T, Nistov Tokheim, L
Maternal body mass index and risk of obstetric, maternal and neonatal outcomes: A cohort study of nulliparous women with spontaneous onset of labor
(2021) *Acta Obstet Gynecol Scand*, 100 (3), pp. 521-530.
3
- Heslehurst, N, Vieira, R, Akhter, Z, Bailey, H, Slack, E, Ngongalah, L
The association between maternal body mass index and child obesity: A systematic review and meta-analysis
(2019) *PLoS Med*, 16 (6), p. e1002817.
4

- Whitaker, RC.
Predicting preschooler obesity at birth: the role of maternal obesity in early pregnancy
(2004) *Pediatrics*, 114 (1), pp. e29-e36.
5
- Denison, FC, Aedla, NR, Keag, O, Hor, K, Reynolds, RM, Milne, A
Care of Women with Obesity in Pregnancy: Green-top Guideline No. 72
(2019) *Bjog*, 126 (3), pp. e62-e106.
6
- Poobalan, AS, Aucott, LS, Gurung, T, Smith, WC, Bhattacharya, S.
Obesity as an independent risk factor for elective and emergency caesarean delivery in nulliparous women-systematic review and meta-analysis of cohort studies
(2009) *Obes Rev*, 10 (1), pp. 28-35.
7
- Saadia, Z.
Association Between Maternal Obesity and Cesarean Delivery Complications
(2020) *Cureus*, 12 (3), p. e7163.
8
- Hautakangas, T, Palomäki, O, Eidstø, K, Huhtala, H, Uotila, J.
Impact of obesity and other risk factors on labor dystocia in term primiparous women: a case control study
(2018) *BMC Pregnancy Childbirth*, 18 (1), p. 304.
9
- Khalid, S, Aris, Shamsir, Zulkhifli, N D, Narayan, G, Ganesalingam, M
The impact of overweight and obesity in pregnancy: A 6 months retrospective study in Hospital Ampang, Malaysia
(2012) *Bjog-An International Journal Of Obstetrics And Gynaecology*,
10
- Homer, CS, Kurinczuk, JJ, Spark, P, Brocklehurst, P, Knight, M.
Planned vaginal delivery or planned caesarean delivery in women with extreme obesity
(2011) *Bjog*, 118 (4), pp. 480-487.
11
- Blomberg, M.
Maternal obesity and risk of postpartum hemorrhage
(2011) *Obstet Gynecol*, 118 (3), pp. 561-568.
12
- Frolova, AI, Raghuraman, N, Stout, MJ, Tuuli, MG, Macones, GA, Cahill, AG.
Obesity, Second Stage Duration, and Labor Outcomes in Nulliparous Women
(2021) *Am J Perinatol*, 38 (4), pp. 342-349.
13
- (2020) *National Health and Morbidity Survey 2019*,
14. (NIH) NIOH, Malaysia MoH. National Survey. Report No.: ISBN 978-983-99320-6-5
- *Excellence NifHaC. Intrapartum care for healthy women and babies 2017* 23/8/2021,
15
- Suehazlyn Zainudin, ZD, Mohamad, Masni, Boon, Alexander Tan Tong, Mohamed, Wan Mohd Izani Wan
Clinical Practice Guidelines on Management of Obesity 2004,
16

- Lundborg, L, Liu, X, Åberg, K, Sandström, A, Tilden, EL, Stephansson, O
Association of body mass index and maternal age with first stage duration of labour
(2021) *Sci Rep*, 11 (1), p. 13843.
17
- Bogaerts, A, Witters, I, Van den Bergh, BR, Jans, G, Devlieger, R.
Obesity in pregnancy: altered onset and progression of labour
(2013) *Midwifery*, 29 (12), pp. 1303-1313.
18
- Denison, FC, Price, J, Graham, C, Wild, S, Liston, WA.
Maternal obesity, length of gestation, risk of postdates pregnancy and spontaneous onset of labour at term
(2008) *Bjog*, 115 (6), pp. 720-725.
19
- Madi, SRC, Garcia, RMR, Souza, VC, Rombaldi, RL, Araújo, BF, Madi, JM.
Effect of Obesity on Gestational and Perinatal Outcomes
(2017) *Rev Bras Ginecol Obstet*, 39 (7), pp. 330-336.
20
- Awan, S, Bibi, S, Makhdoom, A, Farooq, S, Sm, T, Qazi, RA.
Adverse fetomaternal outcome among pregnant overweight women
(2015) *Pak J Med Sci*, 31 (2), pp. 383-387.
21
- Vinturache, A, Moledina, N, McDonald, S, Slater, D, Tough, S.
Pre-pregnancy Body Mass Index (BMI) and delivery outcomes in a Canadian population
(2014) *BMC Pregnancy Childbirth*, 14, p. 422.
22
- Meenakshi, Srivastava, R, Sharma, NR, Kushwaha, KP, Aditya, V.
Obstetric behavior and pregnancy outcome in overweight and obese women: maternal and fetal complications and risks in relation to maternal overweight and obesity
(2012) *J Obstet Gynaecol India*, 62 (3), pp. 276-280.
23
- Zhang, J, Troendle, JF, Yancey, MK.
Reassessing the labor curve in nulliparous women
(2002) *Am J Obstet Gynecol*, 187 (4), pp. 824-828.
24
- Hofmeyr, GJ, Bernitz, S, Bonet, M, Bucagu, M, Dao, B, Downe, S
WHO next-generation partograph: revolutionary steps towards individualised labour care
(2021) *Bjog*, 128 (10), pp. 1658-1662.
25
- Cohen, W, Summersille, M, Friedman, E.
Management of Labor: Are the New Guidelines IMJM Volume 21 No.4, October 2022 Justified?
(2018) *Journal of Midwifery & Women's Health*, p. 63.
26
- Carlhäll, S, Källén, K, Blomberg, M.
Maternal body mass index and duration of labor
(2013) *Eur J Obstet Gynecol Reprod Biol*, 171 (1), pp. 49-53.
27

- Norman, SM, Tuuli, MG, Odibo, AO, Caughey, AB, Roehl, KA, Cahill, AG.
The effects of obesity on the first stage of labor
(2012) *Obstet Gynecol*, 120 (1), pp. 130-135.
28
- Ellekjaer, KL, Bergholt, T, Løkkegaard, E.
Maternal obesity and its effect on labour duration in nulliparous women: a retrospective observational cohort study
(2017) *BMC Pregnancy Childbirth*, 17 (1), p. 222.
29
- Vahratian, A, Zhang, J, Troendle, JF, Savitz, DA, Siega-Riz, AM.
Maternal prepregnancy overweight and obesity and the pattern of labor progression in term nulliparous women
(2004) *Obstet Gynecol*, 104 (5), pp. 943-951.
30. ;(Pt 1)
- Jiang, L, Lin, J, Yan, J, Lin, X, Han, Q, Zhang, H.
Prepregnancy body mass indexes are associated with perinatal outcomes in females with preeclampsia
(2020) *Exp Ther Med*, 20 (1), pp. 500-504.
31
- Vinturache, AE, Chaput, KH, Tough, SC.
Prepregnancy body mass index (BMI) and macrosomia in a Canadian birth cohort
(2017) *J Matern Fetal Neonatal Med*, 30 (1), pp. 109-116.
32
- Calderon, AC, Quintana, SM, Marcolin, AC, Berezowski, AT, Brito, LG, Duarte, G
Obesity and pregnancy: a transversal study from a low-risk maternity
(2014) *BMC Pregnancy Childbirth*, 14, p. 249.
33
- Adams, AD, Coviello, EM, Drassinower, D.
The Effect of Maternal Obesity on Oxytocin Requirements to Achieve Vaginal Delivery
(2020) *Am J Perinatol*, 37 (4), pp. 349-356.
34
- Ferrazzi, E, Brembilla, G, Cipriani, S, Livio, S, Paganelli, A, Parazzini, F.
Maternal age and body mass index at term: Risk factors for requiring an induced labour for a late-term pregnancy
(2019) *Eur J Obstet Gynecol Reprod Biol*, 233, pp. 151-157.
35
- Chu, SY, Kim, SY, Schmid, CH, Dietz, PM, Callaghan, WM, Lau, J
Maternal obesity and risk of cesarean delivery: a meta-analysis
(2007) *Obes Rev*, 8 (5), pp. 385-394.
36
- Mandal, D, Manda, S, Rakshi, A, Dey, RP, Biswas, SC, Banerjee, A.
Maternal obesity and pregnancy outcome: a prospective analysis
(2011) *J Assoc Physicians India*, 59, pp. 486-489.
37
- Durnea, CM, Jaffery, AE, Gauthaman, N, Doumouchtsis, SK.
Effect of body mass index on the incidence of perineal trauma
(2018) *Int J Gynaecol Obstet*, 141 (2), pp. 166-170.
38

- Pettersen-Dahl, A, Murzakanova, G, Sandvik, L, Laine, K.
Maternal body mass index as a predictor for delivery method
(2018) *Acta Obstet Gynecol Scand*, 97 (2), pp. 212-218.
39
- Gilead, R, Yaniv Salem, S, Sergienko, R, Sheiner, E.
Maternal "isolated" obesity and obstetric complications
(2012) *J Matern Fetal Neonatal Med*, 25 (12), pp. 2579-2582.
40
- Verdiales, M, Pacheco, C, Cohen, WR.
The effect of maternal obesity on the course of labor
(2009) *J Perinat Med*, 37 (6), pp. 651-655.
41
- Gaillard, R, Durmuş, B, Hofman, A, Mackenbach, JP, Steegers, EA, Jaddoe, VW.
Risk factors and outcomes of maternal obesity and excessive weight gain during pregnancy
(2013) *Obesity (Silver Spring)*, 21 (5), pp. 1046-1055.
42
- Bhattacharya, S, Campbell, DM, Liston, WA, Bhattacharya, S.
Effect of Body Mass Index on pregnancy outcomes in nulliparous women delivering singleton babies
(2007) *BMC Public Health*, 7, p. 168.
43
- Usha Kiran, TS, Hemmadi, S, Bethel, J, Evans, J.
Outcome of pregnancy in a woman with an increased body mass index
(2005) *Bjog*, 112 (6), pp. 768-772.
44
- Butwick, AJ, Abreo, A, Bateman, BT, Lee, HC, El -Sayed, YY, Stephansson, O
Effect of Maternal Body Mass Index on Postpartum Hemorrhage
(2018) *Anesthesiology*, 128 (4), pp. 774-783.
45
- Blomberg, M.
Maternal body mass index and risk of obstetric anal sphincter injury
(2014) *Biomed Res Int*, 2014, p. 395803.
46
- Joy, S, Istwan, N, Rhea, D, Desch, C, Stanziano, G.
The impact of maternal obesity on the incidence of adverse pregnancy outcomes in high-risk term pregnancies
(2009) *Am J Perinatol*, 26 (5), pp. 345-349.
47
- Trombe, KSD, Rodrigues, LS, Nascente, LMP, Simões, VMF, Batista, RFL, Cavalli, RC
Is birth weight associated with pregestational maternal BMI? BRISA Cohort, Ribeirão Preto, Brazil
(2020) *Braz J Med Biol Res*, 54 (1), p. e10037.
48
- Lamminpää, R, Vehviläinen-Julkunen, K, Gissler, M, Selander, T, Heinonen, S.
Pregnancy outcomes of overweight and obese women aged 35 years or older - A registry-based study in Finland
(2016) *Obes Res Clin Pract*, 10 (2), pp. 133-142.
49

- Gaudet, L, Ferraro, ZM, Wen, SW, Walker, M.
Maternal obesity and occurrence of fetal macrosomia: a systematic review and metaanalysis
(2014) *Biomed Res Int*, 2014, p. 640291.
50
- Lewandowska, M.
Maternal Obesity and Risk of Low Birth Weight, Fetal Growth Restriction, and Macrosomia: Multiple Analyses
(2021) *Nutrients*, 13 (4).
51
- Zhang, C, Wu, Y, Li, S, Zhang, D.
Maternal prepregnancy obesity and the risk of shoulder dystocia: a meta-analysis
(2018) *Bjog*, 125 (4), pp. 407-413.
52
- Fuchs, F.
Prevention of shoulder dystocia risk factors before delivery
(2015) *J Gynecol Obstet Biol Reprod (Paris)*, 44 (10), pp. 1248-1260.
53
- Johansson, S, Sandström, A, Cnattingius, S.
Maternal overweight and obesity increase the risk of fetal acidosis during labor
(2018) *J Perinatol*, 38 (9), pp. 1144-1150.
54
- Frolova, AI, Stout, MJ, Carter, EB, Macones, GA, Cahill, AG, Raghuraman, N.
Internal fetal and uterine monitoring in obese patients and maternal obstetrical outcomes
(2021) *Am J Obstet Gynecol MFM*, 3 (1), p. 100282.
55

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