Eyvah Bebek Geliyor "Preeklamptik Gebede Anestezi"

12. BÖLÜM

Ayşenur SÜMER COŞKUN [1]

OLGU

Otuz yedi yaşında 3. gebeliği olan takipsiz gebe doğum eylemi için hastaneye başvuruyor. Yapılan muayenesinde 37 haftalık gebe, tansiyonunun 185/110 mmHg olduğu, hastanın uykuya meyilli olduğu gözleniyor. Hastaya preeklampsi tanısı konularak magnezyum sülfat infüzyonu başlanıyor. Magnezyum sülfat infüzyonu ile birlikte hastanın bilincinde düzelme gözleniyor. Altı saat sonra Non Stress Test (NST)'de bebekte fetal distres bulguları olduğu tespit edilince hastaya acil sezaryen operasyonu planlanıyor.

PREOPERATİF DÖNEM

Hastanın ilk değerlendirilmesi, ameliyathanede premedikasyon odasında yapıldı. Hasta 37 yaşında, 156 cm boyunda, 96 kg ağırlığında, vücut kitle indeksi (VKİ) 39.4 kg/m^2, genel durumu iyi, bilinci açık, oryante ve koopere, 3. gebeliği, daha önce operasyon geçirmemiş. Bilinen ek hastalığı ve ilaç kullanım öyküsü bulunmuyor. Alerjisi yok. Yapılan kan tahlillerinde Hemoglobin (Hb): 11.3 g dL^{-1}, hematokrit (Hcc): % 34.5, Beyaz küre (WBC): 12.100 uL^{-1}, Platelet (Plt): 110.000 mm^3, International normalized ratio (INR): 1.3, rotrombin zamanı (PT): 12 s, aktive parsiyel tromboplastin zamanı (aPTT): 26 s, total bilirubin:2.0 mgd dL^{-1}, direkt bilirubin:1.34 mg dL^{-1}, albümin 2.8 g dL^{-1}, aspartat amino transferaz (AST): 48 U L^{-1}, alnin amino transferaz (ALT): 72 U L^{-1}, laktat dehidrogenaz (LDH): 402 U L^{-1}, üre:28 mg dL^{-1}, kreatinin: 0.5 mg dL^{-1}, tam idrar tetkikinde (TİT) proteinüri (+) mevcut.

[1] Uzm. Dr. Ayşenur SÜMER COŞKUN, Antalya Kepez Devlet Hastanesi, Anestezi ve Reanimasyon Kliniği anur.sumer@gmail.com

nezyum sülfat, depolarizan olmayan kas gevşeticilerin süresini uzatarak ilaçların etkinliğini artırır. Ancak sezaryen gerektiren preeklampsili kadınlarda doğum sırasında da magnezyum sülfat infüzyonuna devam edilmesi önerilir. Çünkü magnezyum sülfatın yarı ömrü 5 saattir ve sezaryen doğumundan önce magnezyum sülfat infüzyonunun kesilmesi doğum sırasında ve sonrasında nöbet riskini artırabilir (52). Genel anestezi uygulanan hastalarda non-depolarizan kas gevşeticilerin dozu azaltılmalı ve titre edilmelidir. Non-depolarizan kas gevşetici olarak roküronyum tercih edilmeli, nöromüsküler blokajı tersine çevirmek için sugammadeks kullanılmalıdır.

Sonuç olarak, preeklamptik-eklamptik hastalarda çoklu organ tutulumu olabileceği, dolaşım, böbrek, karaciğer, hematolojik ve santral sinir sisteminde çeşitli bozukluklar ortaya çıkabileceği göz önünde tutulmalıdır (53). Bu hastaların ameliyat sonrası dönemde YBÜ'de takip ve tedavi edilme ihtiyacı artmıştır. Postoperatif dönemde pulmoner ödem, solunum sıkıntısı, trombositopeniye bağlı kanama ve özellikle akciğer enfeksiyonuyla karşılaşabileceği unutulmamalıdır (54). Nöroaksiyel analjezi veya anestezi alan preeklamptik hastalar operasyon sırasında ve sonrasında, multidisipliner bir yaklaşımla takip edilmelidir.

KAYNAKLAR

1. World Health Organization. Trends in maternal mortality: 1990 to 2015 Estimates by WHO, UNICEF, UNFPA, The World Bank and the United Nations Population Division. Geneva: World Health Organization; 2015 http://apps.who.int/iris/bitstream/10665/194254/1/9789241565141_eng.pdf?ua=1 (erişim: 6 Nisan 2021).
2. Say L, Chou D, Gemmill A, et al. Review Global causes of maternal death: a WHO systematic analysis. Lancet Glob Health. 2014 Jun; 2(6):323-33.
3. Steegers EA, von Dadelszen P, Duvekot JJ, et al. Pre-eclampsia. Lancet 2010;376:631–44.
4. Report of the National High Blood Pressure Education Program Working Group on High Blood Pressure in Pregnancy. Am J Obstet Gynecol 2000;183:1-22.
5. Dennis AT. Management of pre-eclampsia: issues for anaesthetists. Anaesthesia 2012;67(9):1009-20.
6. Cantwell R, Clutton-Brock T, Cooper G, et al. Saving Mothers' Lives: reviewing maternal deaths to make motherhood safer: 2006–2008. The Eighth Report of the Confidential Enquiries into Maternal Deaths in the United Kingdom. British Journal of Obstetrics and Gynaecology 2011; 118: 1–203.
7. Lewis G (ed). The Confidential Enquiry into Maternal and Child Health (CEMACH). Saving Mothers' Lives: Reviewing Maternal Deaths to Make Motherhood Safer – 2003–2005. The Seventh report on Confidential Enquiries into Maternal Deaths in the United Kingdom. London: CEMACH, 2007.
8. Regitz-Zagrosek V, Lundqvist CB, Borghi C, et al. European Society of Cardiology Guidelines on the management of cardiovascular diseases during pregnancy: the Task Force on the Management of Cardiovascular Diseases during Pregnancy of the European Society of Cardiology (ESC). European Heart Journal 2011; 32: 3147–97.
9. Khan KS, Wojdyla D, Say L, et al. World Health Organization (WHO) analysis of causes of maternal death: a systematic review. Lancet 2006; 367: 1066–74.

10. Gestational Hypertension and Preeclampsia ACOG Practice Bulletin, Number 222 Obstetrics & Gynecology: June 2020;135(6):237-260.
11. Leeman L, Fontaine P. Hypertensive disorders of pregnancy. Am Fam Physician 2008; 78: 93-100.
12. National Collaborating Centre for Women's and Children's Health. Hypertension in pregnancy. The management of hypertensive disorders during pregnancy. National Institute for Health and Clinical Excellence Guideline 107. 2019 https://www.nice.org.uk/guidance/ng133 (erişim: 6 Nisan 2021).
13. Visalyaputra S, Rodanant O, Somboonviboon W, et al. Spinal versus epidural anesthesia for cesarean delivery in severe preeclampsia: a prospective randomized, multicenter study. Anesthesia and Analgesia 2005; 101:862–8.
14. Mandal NG, Surapaneni S. Regional anaesthesia in preeclampsia: advantages and disadvantages. Drugs 2004; 64: 223-236.
15. Al-Mulhim AA, Abu-Heija A, Al-Jamma F, et al. Pre-eclampsia: maternal risk factors and perinatal outcome. Fetal Diagn Ther 2003; 18: 275-280.
16. Gogarten W. Preeclampsia and anaesthesia. Curr Opin Anaesthesiol 2009; 22: 347-351.
17. Scavone BM, Wong CA. Neuraxial Anesthesia and the Ubiquitous Platelet Count Question-How Low Is Too Low? Anesth Analg. 2021 Jun 1;132(6):1527-1530.
18. Bauer ME, Arendt K, Beilin Y, et al. The Society for Obstetric Anesthesia and Perinatology Interdisciplinary Consensus Statement on Neuraxial Procedures in Obstetric Patients With Thrombocytopenia. Anesth Analg. 2021 Jun 1;132(6):1531-1544.
19. Duley L, Henderson-Smart DJ, Meher S, et al. Antiplatelet agents for preventing preeclampsia and its complications. Cochrane Database Syst Rev 2007;18;(2):CD004659.
20. Roberge S, Bujold E, Nicolaides KH. Aspirin for the prevention of preterm and term preeclampsia; systematic review and metaanalysis. Am J Obstet Gynecol 2018; 218:287–293.
21. Horlocker TT, Vandermeuelen E, Kopp SL, et al. Regional Anesthesia in the Patient Receiving Antithrombotic or Thrombolytic Therapy American Society of Regional Anesthesia and Pain Medicine Evidence-Based Guidelines (Fourth Edition) Reg Anesth Pain Med 2018;43:263–309.
22. Gogarten W, Vandermeulen E, Van Aken H, et al. Regional anaesthesia and antithrombotic agents: recommendations of the European Society of Anaesthesiology. Eur J Anaesthesiol 2010;27:999–1015.
23. Pritchard JA, Cunningham FG, Pritchard SA. The Park- land Memorial Hospital protocol for treatment of eclampsia: evaluation of 245 cases. Am J Obstet Gynecol 1984;148:951–63.
24. Hankins GD, Wendel GD Jr, Cunningham FG, et al. Longitudinal evaluation of hemodynamic changes in eclampsia. Am J Obstet Gynecol 1984;150:506–12.
25. Intensive Care National Audit & Research Centre. Female admissions (aged 16–50 years old) to adult, general critical care units in England, Wales and Northern Ireland reported as 'currently pregnant' or 'recently pregnant', 1 January 2009–31 December 2012. https://www.icnarc.org/Our-Audit/ Audits/Cmp/Our-National-Analyses/Obstetrics. (erişim: 18 Haziran 2021).
26. Dennis AT. Transthoracic echocardiography in women with preeclampsia. Curr Opin Anesthesiol 2015; 28:254–260.
27. Tihtonen K, Kööbi T, Yli-Hankala A, et al. Maternal haemodynamics in preeclampsia compared with normal pregnancy during caesarean delivery. BJOG 2006;113(6):657-63.
28. Ram M, Anteby M, Weiniger CF, et al. Acute pulmonary edema due to severe preeclampsia in advanced maternal age women. Pregnancy Hypertens. 2021;25(2):150-155.
29. Brichant JF, Bonhomme V. Preeclampsia: an update. Acta Anaesthesiol Belg. 2014;65(4):137–49.
30. Chattopadhyay S, Das A, Pahari S. Fetomaternal outcome in severe preeclamptic women undergoing emergency cesarean section under either general or spinal anesthesia. J Pregnancy. 2014;2014:1–10.

31. Deshpande AV, Deshpande SA. Spinal anesthesia in preeclamptic parturients. J Evol Med Dent Sci. 2014;3(8):1915–20.
32. Kee WDN. The use of vasopressors during spinal anaesthesia for caesarean section. Curr Opin Anesthesiol. 2017;30(3):319–25.
33. Klöhr S, Roth R, Hofmann T, et al. Definitions of hypotension after spinal anaesthesia for caesarean section: literature search and application to parturients. Acta Anaesthesiol Scand. 2010;54(8):909–21.
34. Cotton DB, Gonik B, Dorman KR: Cardiovascular alterations in severe pregnancy-induced hypertension: Acute effects of intravenous magnesium sulfate. Am J Obstet Gynecol 1984; 148:162–5.
35. Scardo JA, Hogg BB, Newman RB: Favorable hemodynamic effects of magnesium sulfate in preeclampsia. J Obstet Gynecol 1995; 173:1249–53.
36. Aya AG, Vialles N, Tanoubi I, et al. Spinal anesthesia-induced hypotension: a risk comparison between patients with severe preeclampsia and healthy women undergoing preterm cesarean delivery. Anesth Analg 2005;101:869–75.
37. Alemayehu TY, Berhe YW, Getnet H, et al. Hemodynamic changes after spinal anesthesia in preeclamptic patients undergoing cesarean section at a tertiary referral center in Ethiopia: a prospective cohort study. Patient Saf Surg. 2020 Mar 31;14:9.
38. Sivevski A, Ivanov E, Karadjova D, et al. Spinal-induced hypotension in Preeclamptic and healthy Parturients undergoing cesarean section. Open Access Maced J Med Sci. 2019;7(6):996–1000.
39. Saha D, Ghosh S, Bhattacharyya S, et al. Comparison of hemodynamic response and vasopressor requirement following spinal anaesthesia between normotensive and severe preeclamptic women undergoing caesarean section: A prospective study. J Obstet Anaesth Crit Care. 2013;3(1):23.
40. Mendes F, Hennemann G, Luft A, et al. Hemodynamic effects of spinal anesthesia for cesarean section are equivalent in severely preeclamptic and healthy parturients. J Anesthe Clinic Re. 2011;1–6.
41. Nikooseresht M, Rabiei MAS, Hajian P, et al. Comparing the hemodynamic effects of spinal anesthesia in preeclamptic and healthy parturients during cesarean section. Anesthesiol Pain Med. 2016;6(3):115-19.
42. Sobhy S, Dharmarajah K, Arroyo-Manzano D, et al. Type of obstetric anesthesia administered and complications in women with preeclampsia in low-and middle-income countries: A systematic review. Hypertens Pregnancy. 2017;36(4):326–36.
43. Knight M, Nair M, Tuffnell D, et al., editors. MBRRACE-UK. Saving lives improving mothers' care – surveillance of maternal deaths in the UK 2012–14 and lessons learned to inform maternity care from the UK and Ireland Confidential Enquiries into Maternal Deaths and Morbidity 2009–14. Oxford: National Perinatal Epidemiology Unit, University of Oxford; 2016 .
44. Duley L, Meher S, Jones L. Drugs for treatment of very high blood pressure during pregnancy. Cochrane Database Syst Rev 2013; (7):CD001449.
45. Firoz T, Magee LA, MacDonell K, et al. Oral hypertensive therapy for severe hypertension in pregnancy and postpartum: a systematic review. BJOG 2014; 121:1210–20.
46. National Institute for Health and Care Excellence. Hypertension in pregnancy; diagnosis and management [NG133]. https://www.nice.org.uk/guidance/ ng133. (erişim: 18 Nisan 2021).
47. Schrier RW. Body fluid volume regulation in health and disease: a unifying hypothesis. Ann Intern Med 1990;113:155–9.
48. Chien PF, Khan KS, Arnott N. Magnesium sulphate in the treatment of eclampsia and pre-eclampsia: an overview of the evidence from randomised trials. Br J Obstet Gynaecol 1996;103:1085–91.
49. Lu JF, Nightingale CH. Magnesium sulfate in eclampsia and preeclampsia: pharmacokinetic principles. Clin Pharmacokinet 2000;38:305–14.

50. Okusanya BO, Oladapo OT, Long Q, et al. Clinical pharmacokinetic properties of magnesium sulphate in women with pre- eclampsia and eclampsia. BJOG. 2016 Feb;123(3):356-66.
51. Alexander JM, McIntire DD, Leveno KJ, et al. Selective magnesium sulfate prophylaxis for the prevention of eclampsia in women with gestational hypertension. Obstet Gynecol 2006;108:826–32.
52. Taber EB, Tan L, Chao CR, et al. Pharmacokinetics of ionized versus total magnesium in subjects with preterm labor and preeclampsia. Am J Obstet Gynecol 2002;186:1017–21.
53. Fetsch NI, Bremerich DH. [Anesthetic management of parturients with pre-eclampsia and eclampsia]. Anaesthesist 2008;57(1): 87-102.
54. Sibai BM, Mabie BC, Harvey CJ, et al. Pulmonary edema in severe preeclampsiaeclampsia: analysis of thirty-seven consecutive cases. Am J Obstet Gynecol 1987;156(5):1174-9.