

Chapter 7

HYPERTENSIVE DISORDERS OF PREGNANCY, DIAGNOSIS AND MANAGEMENT

Faika Ceylan ÇİFTÇİ¹

INTRODUCTION

About 10 to 22% of all pregnancies are complicated with hypertensive disease. 70% of gestational hypertension is associated with preeclampsia and 30% is due to chronic hypertension. (Hoodbhoy & et al., 2018) Preeclampsia is the most important hypertensive disorder in pregnancy that is characterized by organ dysfunction, hypertension, and/or proteinuria (Buchbinder & et al., 2002)

Blood pressure in Pregnancy

During pregnancy, there is an increase in blood volume, cardiac output, heart rate, pulse pressure, and a decrease in systolic blood pressure and systemic vascular resistance. From the sixth week of pregnancy to the middle of the second trimester, an increase in the blood volume occurs rapidly and continues until birth. The stroke volume of the heart is increased by approximately 30-50% until the onset of the third trimester. A decrease in blood pressure results from the decrease in peripheral vascular resistance that develops during pregnancy (Api & Api, 2013).

Hypertensive disorders of pregnancy have been classified into four states, revealing potential differences in etiology and pregnancy outcomes: Gestational hypertension, chronic hypertension, preeclampsia-eclampsia, pre-eclampsia superimposed on chronic hypertension (Buchbinder & et al., 2002).

Gestational Hypertension

BP raises due to gestational hypertension characterized as new-onset after 20 weeks. However there is an absence of complementary proteinuria or any signs/symptoms that characterize preeclampsia (APEC 2017).

Chronic Hypertension

Chronic arterial hypertension in pregnancy appears with systemic arterial hypertension in the earlier pregnancy. Systemic arterial hypertension is considered

¹ Op. Dr. ,Koru Hospital, faikaceylanciftci@gmail.com

REFERENCES

- Ms74- Al-Safi, Z. & Imudia AN. & Filetti, LC. & et al. Delayed postpartum preeclampsia and eclampsia: demographics, clinical course, and complications. (2011) *Obstet Gynecol.* 118 (5):1102-7.
- 15-ACOG. (2013). Hypertension in Pregnancy Report of the American College of Obstetricians and Gynecologists' Task Force on Hypertension in Pregnancy. [Executive Summary]. The American College of Obstetricians and Gynecologists, 122 (5), 1122-1131.
- 52-25- American College of Obstetricians and Gynecologists. ACOG committee opinion no. 560 (2013): Medically indicated late-preterm and earlyterm deliveries. *Obstet Gynecol* 121 (4): 908-10.
- Ms44- Andrus SS, (2010) Wolfson AB. Postpartum preeclampsia occurring after resolution of antepartum preeclampsia. *J Emerg Med.* 38 (2):168-70.
- 6-APEC (2017). Preeclampsia. (2017). (Accessed at apecguidelines.org/guideline/preeclampsia/ on 10/02/2019)
- 52- Api, M. & Api, O. (2013) Pregnancy and hypertension. *Turkiye Klinikleri J Endocrin-Special Topics*, 6 (3):79-91.
- Ms46- Barron, WM. & Heckerling, P. & Hibbard, JU. et al. (1999) Reducing unnecessary coagulation testing in hypertensive disorders of pregnancy. *Obstet Gynecol.* 94 (3):364-70.
- Ms51- Baweja, S& Kent, A. & Masterson, R. & Roberts, S. & McMahon L. (2011) Prediction of pre-eclampsia in early pregnancy by estimating the spot urinary albumin: creatinine ratio using high-performance liquid chromatography. *BJOG.* 118 (9):1126-32.
- Ms63- Buchbinder, A. & Sibai, BM. & Caritis S. & et al. Adverse perinatal outcomes are significantly higher in severe gestational hypertension than in mild preeclampsia. (2002) *Am J Obstet Gynecol.* 186 (1):66-71.
- Ms43- Cooray, SD. & Edmonds, SM. & Tong, S. & Samarasekera, SP. & Whitehead, CL. (2011) Characterization of symptoms immediately preceding eclampsia. *Obstet Gynecol.* 118 (5):995-9.
- Ms69- Cleary, KL. & Siddiq, Z. & Ananth, CV. & Wright, JD. & Too, G. & et al. Use of Antihypertensive Medications During Delivery Hospitalizations Complicated by Preeclampsia. (2018) *Obstet Gynecol.*
- 18-Donovan P. (2012) Hypertensive disorders of pregnancy, *Aust Prescr*, 35, 47-50. doi: 10.18773/austprescr.2012.023
- Ms47- Durnwald, C. & Mercer, B. (2003) A prospective comparison of total protein/creatinine ratio versus 24-hour urine protein in women with suspected preeclampsia. *Am J Obstet Gynecol.* 189 (3):848-52.
- 44- Firoz, T. & Sotunsa, J. & Adetoro OO. (2016) Treatment postpartum – immediate and long term. Magee LA, Dadelszen PV, Stones W, Mathai M. *The FIGO Textbook of Pregnancy Hypertension* (215-232). Printed in the UK by CPI Group.
- 19-Hoodbhoy, Z. & Hasan, BS. & Muhammed, N. & Chowdhury, D. (2018). Impact of pre-eclampsia on the cardiovascular health of the offspring: a cohort study protocol *BMJ Open* 2018;8:e024331. doi:10.1136/bmjopen-2018-024331
- Ms59-Kane, SC. & Dennis, AT. (2015) Doppler assessment of uterine blood flow in pre-eclampsia: a review. *Hypertens Pregnancy.* 34 (4):400-421.
- 35-32-Magee, LA. & Helewa, M. & Rey E. HYPERTENSION GUIDELINE COMMITTEE; STRATEGIC TRAINING INITIATIVE IN RESEARCH IN THE REPRODU-

- CTIVE HEALTH SCIENCES (STIRRHS) SCHOLARS. Diagnosis, evaluation, and management of the hypertensive disorders of pregnancy. (2008) *J Obstet Gynaecol Can.* doi: 10.1016/S1701-2163 (16)32776-1.
- Ms72-Martin, JN. & Perry, KG. & Blake, PG. & et al. (1997) Better maternal outcomes are achieved with dexamethasone therapy for postpartum HELLP (hemolysis, elevated liver enzymes, and thrombocytopenia) syndrome. *Am J Obstet Gynecol.* 177 (5):1011-7.
- Ms73- Martin, JN. & Thigpen, BD. & Rose, CH. & et al. (2003) Maternal benefit of high-dose intravenous corticosteroid therapy for HELLP syndrome. *Am J Obstet Gynecol.* 189 (3):830-4.
- 2- Mirković, L. & Nejković, L. & Micić, J. (2018). A new pathophysiological concept and new classification of pre-eclampsia. *Vojnosanit Pregl* 75 (1): 83–94. doi:10.2298/VSP1604212301M
- Peres, GM. & Mariana, M. & Cairrão, E. (2018) Pre-Eclampsia and Eclampsia: An Update on the Pharmacological Treatment Applied in Portugal. *J Cardiovasc Dev Dis.* 17;5 (1). pii: E3. doi: 10.3390/jcdd5010003. Review.
- 29- Phipps, E. & Prasanna, D. & Brima, W. & Jim, B. (2016) Preeclampsia: Updates in Pathogenesis, Definitions, and Guidelines. *Clin J Am Soc Nephrol.* 6;11 (6):1102-13. doi: 10.2215/CJN.12081115.
- 1-Ramos JGL & Sass N & Costa SHM. (2017) Preeclampsia. *Rev Bras Ginecol Obstet.* 39 (9):496-512. doi: 10.1055/s-0037-1604471.
- Ms76-Sibai, BM. (1998) Prevention of preeclampsia: a big disappointment. *Am J Obstet Gynecol.* 179 (5):1275-8.
- Ms45- Sibai BM. (2004) Diagnosis, controversies, and management of the syndrome of hemolysis, elevated liver enzymes, and low platelet count. *Obstet Gynecol.* 103 (5 Pt 1):981-91.
- Ms64- Sibai, BM. & Barton, JR. (2007) Expectant management of severe preeclampsia remote from term: patient selection, treatment, and delivery indications. *Am J Obstet Gynecol.* 196 (6):514.e1-9.
- Ms114- Sotiriadis, A. & Hernandez, AE. & da Silva CF. & Ghi, T. & Glanc, P. & et al. (2019) ISUOG CSC Pre-eclampsia Task Force. ISUOG Practice Guidelines: role of ultrasound in screening for and follow up of pre-eclampsia. *Ultrasound Obstet Gynecol.* 53 (1):7-22. doi: 10.1002/uog.20105.
- Ms66- The Collaborative Eclampsia Trial. (1995) Which anticonvulsant for women with eclampsia? Evidence from the Collaborative Eclampsia Trial. *Lancet.* 345 (8963):1455-63.
- Ms75-Yancey, LM. & Withers, E. & Bakes, K. & Abbott, J. (2008) Postpartum preeclampsia: Emergency department presentation and management. *J Emerg Med.*
- Ms60- Wagner LK. (2004) Diagnosis and management of preeclampsia. *Am Fam Physician.* 15. 70 (12):2317-24.