

## Bölüm 9

# GEBELİK VE KALP HASTALIKLARI

Firdevs Aysenur EKİZLER<sup>1</sup>

### GİRİŞ

Gebelik kalp ve damar sistemi üzerinde hemodinamik strese neden olur ve bu durum, özellikle de daha önceden kardiyak hastalığı olan gebelerde hem fetal hem de maternal artmış risk ile ilişkilidir. Gebeliklerin yaklaşık %1-4 lük kısmı kardiyovasküler komplikasyonlarla seyreder

### GEBELİK SIRASINDAKİ HEMODİNAMİK DEĞİŞİKLİKLER

Gebelik dolaşım sistemi üzerinde belirgin değişikliklere yol açar. Bu değişikliklerin çoğu ilk trimester da başlar, 2. trimester da pik yapar ve 3. trimester da plato şeklinde devam eder. Kardiyak output, kalp hızı ve kan volümündeki artışa bağlı olarak %30-50 civarında artış gösterir. Kan basıncı sistemik vasküler dirençteki azalmaya bağlı olarak 10-15 mmHg azalır. Kalp hızında dakikada 10-15 atım artış gözlenir (van Oppen, Stigter, & Bruinse, 1996). Üçüncü trimester da , sırt üstü yatar pozisyonda vana cava ya bası meydana geleceğinden pozisyona bağlı olarak hipotansiyon gelişebilir. Doğum sırası ve hemen sonrasında, uterusun kasılmasına bağlı olarak, kardiyak output, kalp hızı, kan basıncı ve sistemik vasküler dirençte artış görülür. Doğum sonrası plasentanın çıkmasıyla birlikte ard yük azalır ve vana cava basısının ortadan kalkmasıyla ve plasental kanın maternal dolaşıma katılmasıyla ön yük artar. Doğum sonrası 2-6 haftalık süre boyunca kardiyak outputtaki düşüş devam eder (Robson, Dunlop, & Hunter, 1987). Bu değişiklikler anormal kalplerde tolere edilmesi zor ciddi bir stres oluşturur.

### GEBELİKTE KARDİYOVASKÜLER DEĞERLENDİRME

Öykü alma başlangıç risk değerlendirmesinin önemli bir kısmını oluşturur. Eforla nefes darlığı, ayak bileği ödemi ve çarpıntı normal gebelikte de görülebilirken, kardiyak dekompanzasyonu da gösterebilir. Göğüs ağrısı, ortopne ve paroksizmal nokturnal dispne ise kardiyak patolojiyi işaret eder. Gebelikte; periferik ödem, fizyolojik sistolik üfürümler, kalp seslerinde artış, apikal S3, juguler

<sup>1</sup> MD, Türkiye Yüksek İhtisas Hastanesi Kardiyoloji Kliniği, firdevs\_bsk@hotmail.com

## REFERENCES

- Barnes, E. J., Eben, F., & Patterson, D. (2002). Direct current cardioversion during pregnancy should be performed with facilities available for fetal monitoring and emergency caesarean section. *BJOG*, *109*(12), 1406-1407.
- Bates, S. M., Greer, I. A., Pabinger, I., Sofaer, S., & Hirsh, J. (2008). Venous thromboembolism, thrombophilia, antithrombotic therapy, and pregnancy: American College of Chest Physicians Evidence-Based Clinical Practice Guidelines (8th Edition). *Chest*, *133*(6 Suppl), 844S-886S. doi:10.1378/chest.08-0761
- Baumgartner, H., Falk, V., Bax, J. J., De Bonis, M., Hamm, C., Holm, P. J., . . . Group, E. S. C. S. D. (2017). 2017 ESC/EACTS Guidelines for the management of valvular heart disease. *Eur Heart J*, *38*(36), 2739-2791. doi:10.1093/eurheartj/ehx391
- Beyer-Westendorf, J., Michalski, F., Tittl, L., Middeldorp, S., Cohen, H., Abdul Kadir, R., . . . Marten, S. (2016). Pregnancy outcome in patients exposed to direct oral anticoagulants - and the challenge of event reporting. *Thromb Haemost*, *116*(4), 651-658. doi:10.1160/TH16-04-0305
- Chan, W. S., Anand, S., & Ginsberg, J. S. (2000). Anticoagulation of pregnant women with mechanical heart valves: a systematic review of the literature. *Arch Intern Med*, *160*(2), 191-196.
- Cockburn, J., Moar, V. A., Ounsted, M., & Redman, C. W. (1982). Final report of study on hypertension during pregnancy: the effects of specific treatment on the growth and development of the children. *Lancet*, *1*(8273), 647-649.
- Cooper, W. O., Hernandez-Diaz, S., Arbogast, P. G., Dudley, J. A., Dyer, S., Gideon, P. S., . . . Ray, W. A. (2006). Major congenital malformations after first-trimester exposure to ACE inhibitors. *N Engl J Med*, *354*(23), 2443-2451. doi:10.1056/NEJMoa055202
- D'Souza, R., Ostro, J., Shah, P. S., Silversides, C. K., Malinowski, A., Murphy, K. E., . . . Shehata, N. (2017). Anticoagulation for pregnant women with mechanical heart valves: a systematic review and meta-analysis. *Eur Heart J*, *38*(19), 1509-1516. doi:10.1093/eurheartj/ehx032
- Davis, R. L., Eastman, D., McPhillips, H., Raebel, M. A., Andrade, S. E., Smith, D., . . . Platt, R. (2011). Risks of congenital malformations and perinatal events among infants exposed to calcium channel and beta-blockers during pregnancy. *Pharmacoepidemiol Drug Saf*, *20*(2), 138-145. doi:10.1002/pds.2068
- Dufour, P. H., Occelli, B., & Puech, F. (1997). Pregnancy after myocardial infarction. *Int J Gynaecol Obstet*, *59*(3), 251-253.
- Ekizler, F. A., Cay, S., Kafes, H., Ozeke, O., Ozcan, F., Topaloglu, S., . . . Aras, D. (2019). The prognostic value of positive T wave in lead aVR: A novel marker of adverse cardiac outcomes in peripartum cardiomyopathy. *Ann Noninvasive Electrocardiol*, e12631. doi:10.1111/anec.12631
- Elassy, S. M., Elmidany, A. A., & Elbawab, H. Y. (2014). Urgent cardiac surgery during pregnancy: a continuous challenge. *Ann Thorac Surg*, *97*(5), 1624-1629. doi:10.1016/j.athoracsur.2013.10.067
- Haghikia, A., Podewski, E., Berliner, D., Sonnenschein, K., Fischer, D., Angermann, C. E., . . . Hilfiker-Kleiner, D. (2015). Rationale and design of a randomized, controlled multicentre clinical trial to evaluate the effect of bromocriptine on left ventricular function in women with peripartum cardiomyopathy. *Clin Res Cardiol*, *104*(11), 911-917. doi:10.1007/s00392-015-0869-5
- Lee, M. S., Chen, W., Zhang, Z., Duan, L., Ng, A., Spencer, H. T., . . . Shen, A. Y. (2016).

- Atrial Fibrillation and Atrial Flutter in Pregnant Women-A Population-Based Study. *J Am Heart Assoc*, 5(4), e003182. doi:10.1161/JAHA.115.003182
- Magee, L. A., Ramsay, G., & von Dadelszen, P. (2008). What is the role of out-of-office BP measurement in hypertensive pregnancy? *Hypertens Pregnancy*, 27(2), 95-101. doi:10.1080/10641950801950197
- Mancia, G., Fagard, R., Narkiewicz, K., Redon, J., Zanchetti, A., Bohm, M., . . . Task Force, M. (2013). 2013 ESH/ESC Guidelines for the management of arterial hypertension: the Task Force for the management of arterial hypertension of the European Society of Hypertension (ESH) and of the European Society of Cardiology (ESC). *J Hypertens*, 31(7), 1281-1357. doi:10.1097/01.hjh.0000431740.32696.cc
- Mebazaa, A., Yilmaz, M. B., Levy, P., Ponikowski, P., Peacock, W. F., Laribi, S., . . . Filippatos, G. (2015). Recommendations on pre-hospital & early hospital management of acute heart failure: a consensus paper from the Heart Failure Association of the European Society of Cardiology, the European Society of Emergency Medicine and the Society of Academic Emergency Medicine. *Eur J Heart Fail*, 17(6), 544-558. doi:10.1002/ejhf.289
- Ozkan, M., Cakal, B., Karakoyun, S., Gursoy, O. M., Cevik, C., Kalcik, M., . . . Yildiz, M. (2013). Thrombolytic therapy for the treatment of prosthetic heart valve thrombosis in pregnancy with low-dose, slow infusion of tissue-type plasminogen activator. *Circulation*, 128(5), 532-540. doi:10.1161/CIRCULATIONAHA.113.001145
- Pieper, P. G., & Walker, F. (2013). Pregnancy in women with hypertrophic cardiomyopathy. *Neth Heart J*, 21(1), 14-18. doi:10.1007/s12471-012-0358-7
- Robson, S. C., Dunlop, W., & Hunter, S. (1987). Haemodynamic changes during the early puerperium. *Br Med J (Clin Res Ed)*, 294(6579), 1065.
- Rolnik, D. L., Wright, D., Poon, L. C., O’Gorman, N., Syngelaki, A., de Paco Matallana, C., . . . Nicolaides, K. H. (2017). Aspirin versus Placebo in Pregnancies at High Risk for Preterm Preeclampsia. *N Engl J Med*, 377(7), 613-622. doi:10.1056/NEJMoa1704559
- Siu, S. C., Sermer, M., Harrison, D. A., Grigoriadis, E., Liu, G., Sorensen, S., . . . Colman, J. M. (1997). Risk and predictors for pregnancy-related complications in women with heart disease. *Circulation*, 96(9), 2789-2794.
- Sliwa, K., Hilfiker-Kleiner, D., Petrie, M. C., Mebazaa, A., Pieske, B., Buchmann, E., . . . Heart Failure Association of the European Society of Cardiology Working Group on Peripartum, C. (2010). Current state of knowledge on aetiology, diagnosis, management, and therapy of peripartum cardiomyopathy: a position statement from the Heart Failure Association of the European Society of Cardiology Working Group on peripartum cardiomyopathy. *Eur J Heart Fail*, 12(8), 767-778. doi:10.1093/eurjhf/hfq120
- Stout, K. K., & Otto, C. M. (2007). Pregnancy in women with valvular heart disease. *Heart*, 93(5), 552-558. doi:10.1136/hrt.2005.067975
- Tanaka, K., Tanaka, H., Kamiya, C., Katsuragi, S., Sawada, M., Tsuritani, M., . . . Ikeda, T. (2016). Beta-Blockers and Fetal Growth Restriction in Pregnant Women With Cardiovascular Disease. *Circ J*, 80(10), 2221-2226. doi:10.1253/circj.CJ-15-0617
- Turrentine, M. A., Braems, G., & Ramirez, M. M. (1995). Use of thrombolytics for the treatment of thromboembolic disease during pregnancy. *Obstet Gynecol Surv*, 50(7), 534-541.
- Vaidya, V. R., Arora, S., Patel, N., Badheka, A. O., Patel, N., Agnihotri, K., . . . Deshmukh, A. J. (2017). Burden of Arrhythmia in Pregnancy. *Circulation*, 135(6), 619-621. doi:10.1161/CIRCULATIONAHA.116.026681

- van Hagen, I. M., Roos-Hesselink, J. W., Ruys, T. P., Merz, W. M., Goland, S., Gabriel, H., . . . the, E. R. P. T. (2015). Pregnancy in Women With a Mechanical Heart Valve: Data of the European Society of Cardiology Registry of Pregnancy and Cardiac Disease (ROPAC). *Circulation*, *132*(2), 132-142. doi:10.1161/CIRCULATIONAHA.115.015242
- van Hagen, I. M., Thorne, S. A., Taha, N., Youssef, G., Elnagar, A., Gabriel, H., . . . Team, E. (2018). Pregnancy Outcomes in Women With Rheumatic Mitral Valve Disease: Results From the Registry of Pregnancy and Cardiac Disease. *Circulation*, *137*(8), 806-816. doi:10.1161/CIRCULATIONAHA.117.032561
- van Oppen, A. C., Stigter, R. H., & Bruinse, H. W. (1996). Cardiac output in normal pregnancy: a critical review. *Obstet Gynecol*, *87*(2), 310-318. doi:10.1016/0029-7844(95)00348-7
- Villar, J., Carroli, G., Wojdyla, D., Abalos, E., Giordano, D., Ba'aqeel, H., . . . World Health Organization Antenatal Care Trial Research, G. (2006). Preeclampsia, gestational hypertension and intrauterine growth restriction, related or independent conditions? *Am J Obstet Gynecol*, *194*(4), 921-931. doi:10.1016/j.ajog.2005.10.813
- Whyte, J. (2016). FDA Implements New Labeling for Medications Used During Pregnancy and Lactation. *Am Fam Physician*, *94*(1), 12-15.
- Winterfeld, U., Allignol, A., Panchaud, A., Rothuizen, L. E., Merlob, P., Cuppers-Marschalkerweerd, B., . . . Buclin, T. (2013). Pregnancy outcome following maternal exposure to statins: a multicentre prospective study. *BJOG*, *120*(4), 463-471. doi:10.1111/1471-0528.12066