

# Comorbid Disorders in Pregnancy

Lori J. Whelan

## REFERENCES

- Mirghani DA, Doupis J: Gestational diabetes from A to Z. *World J Diabetes* 8: 489, 2017. [PMID: 29290922]
- International Association of Diabetes and Pregnancy Study Groups Consensus Panel: International Association of Diabetes and Pregnancy Study Groups recommendations on the diagnosis and classification of hyperglycemia in pregnancy. *Diabetes Care* 33: 676, 2010. [PMID: 20190296]
- American College of Obstetricians and Gynecologists: Gestational diabetes mellitus. ACOG Practice Bulletin No. 190. *Obstet Gynecol* 131: e49, 2018. [PMID: 29370047]
- Hawkins J, Wing D: Abnormal glucose metabolism: diagnosis and management in the ambulatory setting. *Clin Obstet Gynecol* 55: 731, 2012. [PMID: 22828106]
- Lambert K, Holt R: The use of insulin analogues in pregnancy. *Diabetes Obes Metab* 15: 888, 2013. [PMID: 23489521]
- Blum AK: Insulin use in pregnancy: an update. *Diabetes Spectrum* 29: 92, 2016. [PMID: 27182178]
- Lv S, Wang J, Xu Y: Safety of insulin analogs during pregnancy: a meta analysis. *Arch Gynecol Obstet* 292: 749, 2015. [PMID: 26213555]
- Ringholm L, Pedersen U: Hypoglycaemia during pregnancy in women with type 1 diabetes. *Diabet Med* 29: 558, 2012. [PMID: 22313112]
- Lee-Parritz A: New technologies for the management of pregestational diabetes. *Obstet Gynecol Surv* 67: 167, 2012. [PMID: 22901950]
- Dalfra MG, Burlina S, Sartore G, Lapolla A: Ketoacidosis in diabetic pregnancy. *J Maternal-Fetal Neonatal Med* 29: 2889, 2015. [PMID: 26461169]
- Silbi BM, Viteri OA: Diabetic ketoacidosis in pregnancy. *Obstet Gynecol* 123: 167, 2014. [PMID: 24463678]
- Horwitz DA, Schwarz MD, Scott MG, Lewis LM: Emergency department patients with diabetes have better glycemic control when they have identifiable primary care providers. *Acad Emerg Med* 19: 650, 2012. [PMID: 22632540]
- Hawthorne G: Maternal complications in diabetic pregnancy. *Best Pract Res Clin Obstet Gynecol* 25: 77, 2011. [PMID: 21130689]
- Gabbe SG, Holing E, Temple P, et al: Benefits, risks, costs and patient satisfaction associated with insulin pump therapy for the pregnancy complicated by type 1 diabetes mellitus. *Am J Obstet Gynecol* 182: 1283, 2000. [PMID: 10871440]
- De Valk HW, Visser GH: Insulin during pregnancy, labour and delivery. *Best Pract Res Clin Obstet Gynaecol* 25: 65, 2011. [PMID: 21186142]
- DeCherney AH, Nathan L, Goodwin TM, et al: Diabetes mellitus and pregnancy, in *Current Diagnosis & Treatment Obstetrics and Gynecology*, 11th ed. New York, NY: Appleton and Lange; 2013.
- Andersen SL, Olsen J, Wu CS, Laurberg P: Birth defects after early pregnancy use of antithyroid drugs: a Danish nationwide study. *J Clin Endocrinol Metab* 98: 4373, 2013. [PMID: 24151287]
- Alexander EK, Pearce EN, Brent GA, et al: 2017 GUIDELINES of the American Thyroid Association for the diagnosis and management of thyroid disease during pregnancy and the postpartum. *Thyroid* 27: 315, 2017. [PMID: 28056690]
- McAnulty J: Arrhythmias in pregnancy. *Cardiol Clin* 30: 425, 2012. [PMID: 22813367]
- Schroeder JS, Harrison DC: Repeated cardioversion during pregnancy. *Am J Cardiol* 27: 445, 1971. [PMID: 5572585]
- Fishman WH, Elkayam U, Aronow WS: Cardiovascular drugs in pregnancy. *Cardiol Clin* 30: 463, 2011. [PMID: 22813371]
- Trappe HJ: Emergency therapy of maternal and fetal arrhythmias during pregnancy. *J Emerg Trauma Shock* 3: 153, 2010. [PMID: 20606792]
- Enriquez AD, Economy KE, Tedrow UB: Advances in arrhythmia and electrophysiology: contemporary management of arrhythmias during pregnancy. *Circ Arrhythm Electrophysiol* 7: 961, 2014. [PMID: 25336366]
- Jaffe R, Gruber A, Feigin M, et al: Pregnancy with an artificial pacemaker. *Obstet Gynecol Surv* 42: 137, 1987. [PMID: 3550552]
- James AH, Jamison MG, Biswas MS, et al: Acute myocardial infarction in pregnancy: a United States population-based study. *Circulation* 113: 1564, 2006. [PMID: 16534011]
- Elkayam U, Jalnapurkar S, Barakkat MN, et al: Pregnancy-associated acute myocardial infarction: a review of contemporary experience in 150 cases between 2006 and 2011. *Circulation* 129: 1695, 2014. [PMID: 24753549]
- Havakuk O, Goland S, Mehra A, Elkayam U: Pregnancy and the risk of spontaneous coronary artery dissection. *Circ Cardiovasc Interv* 10: e004941, 2017. [PMID: 28302642]
- European Society of Gynecology; Association for European Paediatric Cardiology; German society for Gender Medicine; ESC Committee for Practice Guidelines: ESC 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. *Eur Heart J* 32: 3147, 2011. [PMID: 21873418]
- Ismail S, Wong C, Rajan P, et al: ST-elevation acute myocardial infarction in pregnancy: 2016 update. *Clin Cardiol* 4: 3999, 2017. [PMID: 28191905]
- Boyle S, Nicolae M, Kostner K, et al: Dilated cardiomyopathy in pregnancy: outcomes from an Australian Tertiary Centre For Maternal Medicine and review of the current literature. *Heart Lung Circ* 2: S1443, 2018. [PMID: 29685714]
- Sciscione A, Ivester T, Largoza M, et al: Acute pulmonary edema in pregnancy. *Obstet Gynecol* 101: 511, 2003. [PMID: 12636955]
- Tirada T, Dreizin D, Khati NJ, Akin EA, Zeman RK: Imaging pregnant and lactating patients. *Radiographics* 35: 1751, 2015. [PMID: 26466183]
- Heit JA, Kobrevig CE, James AH, et al: Trends in the incidence of venous thromboembolism during pregnancy or postpartum: a 30-year population-based study. *Ann Intern Med* 143: 697, 2005. [PMID: 16287790]
- Jackson E, Curtis KM, Gaffield ME: Risk of venous thromboembolism during the postpartum period: a systematic review. *Obstet Gynecol* 117: 691, 2011. [PMID: 21343773]
- McLean KC, James AH: Diagnosis and management of VTE in pregnancy. *Clin Obstet Gynecol* 61: 206, 2018. [PMID: 29470182]
- McLean K, Cushman M: Venous thromboembolism and stroke in pregnancy. *Hematology (Am Soc Hematol Educ Program)* 2016: 243, 2016. [PMID: 279113487]
- James AH: Venous thromboembolism in pregnancy. *Arterioscler Thromb Vasc Biol* 29: 326, 2009. [PMID: 19228606]
- Wells PS, Owen C, Doucette S, et al: Does this patient have deep vein thrombosis? *JAMA* 295: 199, 2006. [PMID: 16403932]
- Goodacre S, Sutton AJ, Sampson FC: Meta-analysis: the value of clinical assessment in the diagnosis of deep vein thrombosis. *Ann Intern Med* 143: 129, 2005. [PMID: 16027455]
- Chan WS, Lee A, Spencer FA, et al: Predicting deep venous thrombosis in pregnancy: out in "LEF" field? *Ann Intern Med* 151: 85, 2009. [PMID: 19620161]
- To MS, Hunt BJ, Nelson-Piercy C: A negative d-dimer does not exclude venous thromboembolism (VTE) in pregnancy. *J Obstet Gynaecol* 28: 222, 208. [PMID: 18393025]
- Palareti G, Schellong S: Isolated distal deep vein thrombosis: what we know and what we are doing. *J Thromb Haemost* 10: 11, 2012. [PMID: 22082302]
- <https://clinicaltrials.gov/ct2/show/NCT01319474> (ClinicalTrials.gov: Whole-leg ultrasound in pregnant patients (CLOT-3).) Accessed July 25, 2018.
- Bernardi E, Camporese G, Buller HR, et al: Serial 2-point ultrasonography plus D-dimer vs whole-leg color-coded Doppler ultrasonography for diagnosing suspected symptomatic deep vein thrombosis: a randomized controlled trial. *JAMA* 300: 1653, 2008. [PMID: 18840838]
- Fox JC, Bertoglio KC: Emergency physician performed ultrasound for DVT evaluation. *Thrombosis* 2011: 938709, 2011. [PMID: 22084671]
- Ono A, Murase K, Taniguchi T, et al: Deep venous thrombosis: diagnostic value of non-contrast-enhanced MR venography using electrocardiography-triggered three-dimensional half-Fourier FSE. *Magn Reson Med* 64: 88, 2010. [PMID: 20572137]
- Lindquist CM, Karlicki F, Lawrence P, Strzelczyk J, Pawlyshyn N, Kirkpatrick ID: Utility of balanced steady-state free precession MR venography in the diagnosis of lower extremity deep venous thrombosis. *AJR Am J Roentgenol* 194: 1357, 2010. [PMID: 20410426]
- Karande GY, Hedgire SS, Sanchez Y, et al: Advanced imaging in acute and chronic deep vein thrombosis. *Cardiovasc Diagn Ther* 6: 493, 2016. [PMID: 28123971]
- Platz E, Hassanein AH, Shah A, Goldhaber SZ, Solomon SD: Regional right ventricular strain pattern in patients with acute pulmonary embolism. *Echocardiography* 29: 464, 2012. [PMID: 22276918]
- Vitarelli A, Barillà F, Capotosto L, et al: Right ventricular function in acute pulmonary embolism: a combined assessment by three-dimensional and speckle-tracking echocardiography. *J Am Soc Echocardiogr* 27: 329, 2014. [PMID: 24325961]
- Committee on Obstetric Practice: Committee Opinion No. 723: Guidelines for diagnostic imaging during pregnancy and lactation. *Obstet Gynecol* 130: e210, 2017. [PMID: 28937575]
- <http://www.acog.org/Resources-And-Publications/Committee-Opinions/Committee-on-Patient-Safety-and-Quality-Improvement/Patient-Safety-in-Obstetrics-and-Gynecology>. (ACOG Committee on Safety and Quality Improvement. ACOG committee opinion: patient safety in obstetrics and gynecology. American Congress of Obstetricians and Gynecologists Web site. Updated December 2009.) Accessed December 29, 2013.
- Leung AN, Bull TM, Jaeschke R, et al: An official American Thoracic Society/Society of Thoracic Radiology clinical practice guideline: evaluation of suspected pulmonary embolism in pregnancy. *Am J Respir Crit Care Med* 184: 1200, 2011. [PMID: 22086989]
- Greer IA: Thrombosis in pregnancy: updates in diagnosis and management. *Hematology Am Soc Hematol Educ Program* 2012: 203, 2012. [PMID: 23233582]
- Tang AW, Greer I: A systematic review on the use of new anticoagulants in pregnancy. *Obstet Med* 6: 64, 2013. [PMID: 27757159]
- Aherne GS, Hadjiliadis D, Govert JA, et al: Massive pulmonary embolism during pregnancy successfully treated with recombinant tissue plasminogen activator: a case report and review of treatment options. *Arch Intern Med* 162: 1221, 2002. [PMID: 12038939]
- Leonhardt G, Gaul C, Nietsch HH, et al: Thrombolytic therapy in pregnancy. *J Thromb Thrombolysis* 21: 271, 2006. [PMID: 16683220]
- Li Y, Margraf J, Kluck B, Jenny D, Castaldo J: Thrombolytic therapy for ischemic stroke secondary to paradoxical embolism in pregnancy: a case report and literature review. *Neurologist* 18: 44, 2012. [PMID: 22217616]
- Casais P, Rolandi F: Prosthetic valve thrombosis in pregnancy: a promising treatment for a rare and mostly preventable complication. *Circulation* 128: 481, 2013. [PMID: 23812181]
- Kwon HL, Belanger K, Brecken MB: Asthma prevalence among pregnant and child-bearing aged women in the United States: estimates from national health surveys. *Ann Epidemiol* 13: 317, 2003. [PMID: 12821270]
- Murphy VE: Managing asthma in pregnancy. *Breathe* 11: 258, 2015. [PMID: 27066119]
- Mendola P, Laughon KS, Mamisto TI, et al: Obstetric complications among US women with asthma. *Am J Obstet Gynecol* 208: 127.e1-127.e8, 2013. [PMID: 23159695]
- Murphy VE, Gibson PG: Asthma in pregnancy. *Clin Chest Med* 32: 1, 2011. [PMID: 21277452]

64. National Heart, Lung, and Blood Institute; National Asthma Education and Prevention Program Asthma and Pregnancy Working Group: NAEPP Expert Panel Report. Managing asthma during pregnancy: recommendations for pharmacologic treatment—2004 update. *J Allergy Clin Immunol* 115: 34, 2005. [PMID: 15637545]
65. McCallister JW: Asthma in pregnancy: management strategies. *Curr Opin Pulm Med* 19: 13, 2013. [PMID: 23154712]
66. Bonham CA, Patterson KC, Strek ME: Asthma outcomes and management during pregnancy. *Chest* 153: 515, 2018. [PMID: 28867295]
67. Lin KW, Brown TR: Screening for asymptomatic bacteriuria in adults. *Am Fam Physician* 81: 508, 2010. [PMID: 2048506]
68. Eigbefoh JO, Isabu P, Okpere E, et al: The diagnostic accuracy of the rapid dipstick test to predict asymptomatic urinary tract infection of pregnancy. *Obstetrics* 28: 490, 2008. [PMID: 18850421]
69. Schnarr J, Smaill F: Asymptomatic bacteriuria and symptomatic urinary tract infections in pregnancy. *Eur J Clin Invest* 38: 50, 2008. [PMID: 18826482]
70. Phelan S: Renal disease in pregnancy ambulatory issues. *Clin Obstet Gynecol* 55: 829, 2012. [PMID: 22828114]
71. Matuszkiewicz-Rowińska J, Małyszko J, Wieliczko M: Urinary tract infections in pregnancy: old and new unresolved diagnostic and therapeutic problems. *Arch Med Sci* 11: 67, 2015. [PMID: 25861291]
72. Crider KS, Cleves MA, Reehuis J, Berry RJ, Hobbs CA, Hu DJ: Antibacterial medication use during pregnancy and risk of birth defects: National Birth Defects Prevention Study. *Arch Pediatr Adolesc Med* 163: 978, 2009. [PMID: 19884587]
73. Committee on Obstetric Practice: ACOG committee opinion 717. Sulfonamides, nitrofurantoin and risk of birth defects. *Obstet Gynecol* 130: e150, 2017. [PMID: 28832488]
74. Wilson KL, Alexander JM: Seizures and intracranial hemorrhage. *Obstet Gynecol Clin North Am* 40: 103, 2013. [PMID: 23466140]
75. Bateman BT, Olbrecht VA, Berman MF, et al: Peripartum subarachnoid hemorrhage: nationwide data and institutional experience. *Anesthesiology* 116: 324, 2012. [PMID: 22166951]
76. Treadwell SD, Thanvi B, Robinson TG: Stroke in pregnancy and the puerperium. *Postgrad Med J* 84: 238, 2008. [PMID: 18508980]
77. Great KE, Bushnell CD: Stroke and pregnancy: clinical presentation, evaluation, treatment and epidemiology. *Clin Obstet Gynecol* 56: 350, 2013. [PMID: 23632643]
78. Sousa Gomes M, Guimaraes M, Montenegro N: Thrombolysis in pregnancy: a literature review. *J Matern Fetal Neonatal Med* 11: 1, 2018. [PMID: 29378443]
79. Kashkoush AI: Cerebral venous sinus thrombosis in pregnancy and puerperium: a pooled, systematic review. *J Clin Neurosci* 39: 9, 2017. [PMID: 28274514]
80. Jarvis S, Dassan P, Piercy CN: Managing migraines in pregnancy. *BMJ* 360: k80, 2018. [PMID: 29371217]
81. Body C, Christie JA: Gastrointestinal diseases in pregnancy: nausea, vomiting, hyperemesis gravidarum, gastroesophageal reflux disease, constipation, and diarrhea. *Gastroenterol Clin North Am* 45: 267, 2016. [PMID: 27261898]
82. Avsar AF, Keskin HL: Haemorrhoids during pregnancy. *J Obstet Gynaecol* 30: 231, 2010. [PMID: 20373920]
83. Ebrahimi N, Vohra S, Gedeon C, et al: The fetal safety of hydrocortisone-pramoxine (Proctofoam HC) for the treatment of hemorrhoids in late pregnancy. *J Obstet Gynaecol Can* 33: 153, 2011. [PMID: 21352635]
84. DeCherney AH, Nathan L, Goodwin TM, et al: Surgical disorders in pregnancy, in *Current Diagnosis and Treatment Obstetrics and Gynecology*, 11th ed. New York, NY: Appleton and Lange; 2013.
85. Jung JY, Na JU, Han SK, Choi PC, Lee JH, Shin DH: Differential diagnoses of magnetic resonance imaging for suspected acute appendicitis in pregnant patients. *World J Emerg Med* 9: 26, 2018. [PMID: 29290892]
86. Konrad J, Grand D, Lourenco A: MRI: first line imaging modality for pregnant patients with suspected appendicitis. *Abdom Imaging* 40: 3359, 2015. [PMID: 26338256]
87. Theilen LH, Mellnick VM, Longman RE, et al: Utility of magnetic resonance imaging for suspected appendicitis in pregnant women. *Am J Obstet Gynecol* 212: 345.e1-6, 2015. [PMID: 25291255]
88. Pansky M, Feingold M, Maymon R, et al: Maternal adnexal torsion is associated with significant incidence of recurrence. *J Minim Invasive Gynecol* 16: 551, 2009. [PMID: 19835796]
89. Ginath S, Shalev A, Keidar R, et al: Differences between adnexal torsion in pregnant and nonpregnant women. *J Minim Invasive Gynecol* 19: 708, 2012. [PMID: 23084674]
90. Hasson J, Tsafir Z, Azem F, et al: Comparison of adnexal torsion between pregnant and nonpregnant women. *Am J Obstet Gynecol* 202: 536.e1-6, 2010. [PMID: 20060090]
91. Weston J, Bromley R, Jackson CF, et al: Monotherapy treatment of epilepsy in pregnancy: congenital malformation outcomes in the child. *Cochrane Database Syst Rev* 11: CD010224, 2016. [PMID: 27819746]
92. Jagoda A, Riggio S: Emergency department approach to managing seizures in pregnancy. *Ann Emerg Med* 20: 80, 1991. [PMID: 1984736]
93. Rajiv KR, Radhakrishnan A: Status epilepticus in pregnancy: etiology, management, and clinical outcomes. *Epilepsy Behav* 76: 114, 2017. [PMID: 28899640]
94. Günthard HF, Saag MS: Antiretroviral drugs for treatment and prevention of HIV infection in adults: 2016 recommendations of the International Antiviral Society-USA Panel. *JAMA* 316: 191, 2016. [PMID: 27404187]
95. <https://aidsinfo.nih.gov/contentfiles/lvguidelines/PerinatalGL.pdf> (Recommendations for the use of antiretroviral drugs in pregnant women with HIV infection and interventions to reduce perinatal HIV transmission in the United States.) Accessed July 25, 2018.
96. Kaplan JE, Benson C: Guidelines for prevention and treatment of opportunistic infections in HIV-infected adults and adolescents. *MMWR Recomm Rep* 58(RR-4): 1, 2009. [PMID: 19357635]
97. Keegan J, Parva M, Finnegan M, et al: Addiction in pregnancy. *J Addict Dis* 29: 175, 2010. [PMID: 20407975]
98. Young JL, Martin PR: Treatment of opioid dependence in the setting of pregnancy. *Psychiatr Clin N Am* 35: 441, 2012. [PMID: 22640765]
99. McCarthy JJ: Intrauterine abstinence syndrome (IAS) during buprenorphine inductions and methadone tapers: can we assure the safety of the fetus? *J Matern Fetal Neonatal Med* 25: 109, 2012. [PMID: 21867403]
100. May PA, Chambers CD: Prevalence of fetal alcohol spectrum disorders in 4 US communities. *JAMA* 319: 474, 2018. [PMID: 29411031]
101. DeVido J, Bogunovic O, Weiss RD: Alcohol use disorders in pregnancy. *Harv Rev Psychiatry* 23: 112, 2015. [PMID: 25747924]
102. [http://www.cdc.gov/ViolencePrevention/pdf/NISVS\\_Report2010-a.pdf](http://www.cdc.gov/ViolencePrevention/pdf/NISVS_Report2010-a.pdf). (Black MC, Basile KC, Breidig MJ, et al: The National Intimate Partner and Sexual Violence Survey (NISVS): 2010 summary report. Atlanta, GA: National Center for Injury Prevention and Control, Centers for Disease Control and Prevention; 2011.) Accessed December 16, 2011.
103. Committee on Health Care for Underserved Women: ACOG Committee Opinion Number 518: Access to emergency contraception. *Obstet Gynecol* 120: 1250, 2012. [PMID: 23090563]
104. Section on Breastfeeding: Breastfeeding and the use of human milk. *Pediatrics* 129: e827, 2012. [PMID: 22371471]
105. Wang PI, Chong SI, Kielar AZ, et al: Imaging of pregnant and lactating patients: part 2, evidence-based review and recommendations. *AJR* 198: 785, 2012. [PMID: 22451542]
106. Goldberg-Stein SA, Liu B, Hahn PF: Radiation dose management: part 2, estimating fetal radiation risk from CT during pregnancy. *AJR* 198: W352, 2012. [PMID: 22451572]