Changes in Serum Creatinine during and after Pregnancy in Women with or without Chronic Kidney Disease: An Observational Study

Carole Marxer[1], Julie Paik[2], Min Zhuo[2], Rishi Desai[2], Katrina Wilcox Hagberg[2], Susan Jick[2], Christoph Meier[1], and Julia Spoendlin[2]

[1]University Hospital Basel
[2]Affiliation not available

May 23, 2022

Abstract

Objective To characterize pregnant women with or without pre-existing chronic kidney disease (CKD) and to describe changes in renal filtration during and after pregnancy. Design Descriptive study. Setting UK-based Clinical Practice Research Datalink GOLD linked to hospital data (2000-2019). Population Pregnancies of women with or without pre-existing CKD, categorized by median baseline eGFR [ml/min/1.73m2] based on serum creatinine (SCr [mg/dl]) measurements (proteinuria under-recorded). Methods Description of median SCr levels within two-week periods during and within one year after pregnancy. Results Of 14'401 pregnancies, 84% had a normal baseline eGFR[?]90. In 1'932 women (13%) with a low-normal eGFR=75-89, SCr patterns during and after pregnancy followed the pattern of women with normal eGFR, although at higher starting levels (median baseline SCr=0.92, IQR=0.88-0.96). SCr levels returned to baseline by week 3/4 postpartum. In 388 women (3%) with a moderately low baseline eGFR=60-74, median baseline SCr levels were 1.05 (IQR=1.01-1.10) and patterns also followed those of women with normal eGFR. However, SCr levels increased slower in trimester 3 and reached baseline levels at week 9/10 postpartum. 53 women (<1%) with a low baseline eGFR=15-59 (median baseline SCr levels=1.43, IQR=1.26-1.72) showed renal adaptation in trimester 1/2, but increased SCr levels of 1.71 (IQR=1.32-2.36) in trimester 3 (small sample size, 10-week periods). Conclusion The observed prolonged hyperfiltration in women with baseline eGFR<75 may warrant closer medical surveillance. Future studies should evaluate individual risk factors with focus on subgroups of women with eGFR=60-74 and eGFR<60. Funding Non. Key words Disease progression, pregnancy, nephrology, renal filtration

Hosted file

220520_Manuscript_Preg-CKD-SCr_without-NR_BJOG.docx available at https://authorea.com/users/484263/articles/570168-changes-in-serum-creatinine-during-and-after-pregnancy-in-women-with-or-without-chronic-kidney-disease-an-observational-study

Hosted file

220519_Tables_Figures_Preg-CKD-SCr_without-NR_BJOG.docx available at https://authorea.com/users/484263/articles/570168-changes-in-serum-creatinine-during-and-after-pregnancy-in-women-with-or-without-chronic-kidney-disease-an-observational-study