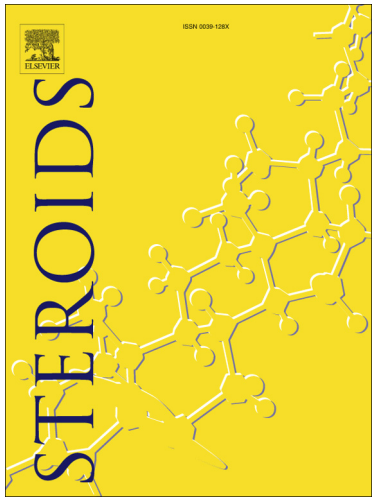

C11-oxy C_{19} and C11-oxy C_{21} steroids in neonates: UPC^2-MS/MS quantification of plasma 11β-hydroxyandrostenedione, 11-ketotestosterone and 11-ketoprogesterone.

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PII: S0039-128X(18)30110-7
DOI: https://doi.org/10.1016/j.steroids.2018.06.003
Reference: STE 8272

To appear in: *Steroids*

Received Date: 22 March 2018
Revised Date: 30 May 2018
Accepted Date: 2 June 2018

Please cite this article as: du Toit, T., Finken, M.J.J., Hamer, H.M., Heijboer, A.C., Swart, A.C., C11-oxy C_{19} and C11-oxy C_{21} steroids in neonates: UPC^2-MS/MS quantification of plasma 11β-hydroxyandrostenedione, 11-ketotestosterone and 11-ketoprogesterone., *Steroids* (2018), doi: https://doi.org/10.1016/j.steroids.2018.06.003

C11-oxy C_{19} and C11-oxy C_{21} steroids in neonates: UPC^2-MS/MS quantification of plasma 11β-hydroxyandrostenedione, 11-ketotestosterone and 11-ketoprogesterone.

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Keywords

disorders of sexual development (DSD); congenital adrenal hyperplasia (CAH); 11keto-dihydrotestosterone (11KDHT); congenital hypogonadotropic hypogonadism (CHH); newborn care; 11β-hydroxysteroid dehydrogenase (11βHSD)

Abstract

The purpose of this study was to identify the C11-oxy C_{19} and C11-oxy C_{21} steroids in male and female neonate plasma. At birth, the most abundant C11-oxy steroids detected in neonatal plasma were 11β-hydroxyandrostenedione, ~13 nM, and 11-ketoprogesterone, ~23 nM. C11-oxy C_{19} steroids were higher than C_{19} steroids in neonatal plasma, 22.2 nM vs 5.4 nM. The inclusion of C11-oxy C_{19} and C_{21} steroid reference ranges in routine steroid analyses will assist the characterization of disorders associated with impaired steroidogenic enzyme expression and the identification of potential biomarkers.

1. Introduction

Steroid hormone reference ranges enable clinicians to identify abnormal levels characteristic of disorders in newborns, in order to determine relevant management. Currently, advances in