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C11-oxy C_{19} and C11-oxy C_{21} steroids in neonates: UPC²-MS/MS quantification of plasma 11 β -hydroxyandrostenedione, 11-ketotestosterone and 11-ketoprogesterone.

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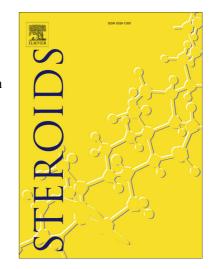
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ACCEPTED MANUSCRIPT

- 1 C11-oxy C₁₉ and C11-oxy C₂₁ steroids in neonates: UPC²-MS/MS quantification of
- 2 plasma 11β-hydroxyandrostenedione, 11-ketotestosterone and 11-ketoprogesterone.
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10 **Keywords**

- 11 disorders of sexual development (DSD); congenital adrenal hyperplasia (CAH); 11keto-
- dihydrotestosterone (11KDHT); congenital hypogonadotropic hypogonadism (CHH); newborn care;
- 13 11β-hydroxysteroid dehydrogenase (11βHSD)

14 Abstract

- 15 The purpose of this study was to identify the C11-oxy C₁₉ and C11-oxy C₂₁ steroids in male and
- female neonate plasma. At birth, the most abundant C11-oxy steroids detected in neonatal plasma
- 17 were 11β-hydroxyandrostenedione, ~13 nM, and 11-ketoprogesterone, ~23 nM. C11-oxy C₁₉
- steroids were higher than C₁₉ steroids in neonatal plasma, 22.2 nM vs 5.4 nM. The inclusion of
- 19 C11-oxy C₁₉ and C₂₁ steroid reference ranges in routine steroid analyses will assist the
- 20 characterization of disorders associated with impaired steroidogenic enzyme expression and the
- 21 identification of potential biomarkers.

22 1. Introduction

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

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