Background:
Life-long glucocorticoid (GC) treatment is often required in patients with CAH due to 21-hydroxylase deficiency in order to replace their cortisol deficiency and to avoid the ACTH-dependent androgen levels increase. In these patients, the multiple daily doses of conventional GCs required can cause cortisol overexposure, leading to an increased risk of metabolic syndrome (MS), an impaired quality of life and a poor treatment compliance.

Patients:
Twenty-three CAH pts treated with hydrocortisone (HC) or prednisone (P) for at least 12 months, switched to DR-HC, were evaluated before and after 6-12 months of DR-HC (Tab. 1). The same cohort of pts, stably treated with conventional GCs during the 12 months before the switch was used as control.

Results: Metabolic profile
At 6 and 12 months (M) different metabolic parameters improved: in particular fasting plasma glucose (FG) (6 M p<0.003; 12 M p=NS (Fig.1); HDL-cholesterol (6 M p<NS; 12 M p<0.001) (Fig.2) and LDL-cholesterol levels (6 M p<0.02; 12 M p<0.024) (Fig.3).
A clear diagnosis of MS was performed in one patient at baseline, but this patient displayed no criteria for this diagnosis after 6 and 12 M.
No significant difference was observed between baseline and controls.

Methods:
- Metabolic and hormonal parameters were measured using routine assays and the MS was evaluated according with IDF criteria.
- QoL was evaluated using AddiQol Questionnaire
- DS using Beck Depression Inventory II
- TC using Morisky 8-items medication adherence Questionnaire

Results: Hormonal profile
No significant change was observed in morning plasma ACTH and UFC. Excluding the 4 pts treated with P at baseline*, a significant increase in morning serum cortisol levels was registered after 6 M (p=0.016), not confirmed after 12 M.
Despite the unchanged fludrocortisone doses, both in the entire cohort (p=0.002) and in Salt Wasting pts** (p=0.009) a significant decrease in renin levels was reported at 6 M, not confirmed at 12 M (Tab. 2).
No significant differences were observed in 17-OH progesterone, testosterone, DHEA-S and Δ-4 androstenedione levels both in males and in females (Tab. 3). In particular in females no clinical worsening of symptoms and signs related to hyperandrogenism were reported.
No significant difference was observed between baseline and controls.

Results: Quality of life and depression
QoL resulted improved: in particular vitality and working ability ameliorated in 5 pts (22%), general health perception and sleep quality in 4 pts (17%), body pain perception in 9 pts (39%).
DS improved after 6 (p=0.07) and after 12 M (p=0.04) (Fig.4).
TC significantly improved after 6 (p=0.009) and after 12 M (p<0.001) (Fig.5).

Conclusions:
The switch from conventional GCs to once daily DR-HC in patients with CAH due to 21-hydroxylase deficiency significantly improved metabolic syndrome, depression status and treatment compliance, maintaining an optimal hormone control.

References: