RESULTS AND CONCLUSIONS

We misdiagnosed usually in almost all cases. Appropriate activity, especially in children, shows that most appear to be under the control of the adrenal gland, and this is confirmed by the study of the genes involved in the biosynthesis of Aldosterone (CYP11B2).

We describe the clinical onset and course and the genetic evaluation of five patients with hyperreninemic hypoaldosteronism in Tuscany.

METHODS

Five patients (two males, three females) came to our attention for electrolytes disorder (hyponatremia and hyperkaliemia, increased plasmatic renin activity, impaired aldosteron level - low/normal - ) with normal cortisol and sex hormones values. Three of them presented with neonatal salt-wasting syndrome. They all have been suspected for isolated hyperreninemic hypoaldosteronism on the basis of clinical and laboratory features. Appropriate therapy with fludrocortisone was started in four of them with general improvement. All of the patients underwent genetic analysis: amplification by PCR and Sanger sequencing of 9 exons of the CYP11B2 gene; four of them are showed in the figure below.

Figure: Electropherograms of segment of CYP11B2 gene showing mutations. The mutation site is underlined and indicated by an arrow.

Amplication of the 9 exons of the CYP11B2 gene with flanking areas by means of PCR and subsequently sequenced directly

Three patients showed mutations in homozygous state: c.554C>T (p.Thr185Ile) in exon 3 (Patient 2), c.780G>A (p.Trp260*) in exon 4 (Patient 3), c.1231G>C (p.Gly411Arg) in exon 8 (Patient 4). One patient showed two mutations in heterozygous state: c.554C>T (p.Thr185Ile) in exon 3 and c.763G>T (p.Glu255*) in exon 4 (Patient 1). They all supported the diagnosis of hypoaldosteronism. (Figure)

Clinical and laboratory suspect of hyperreninemic hypoaldosteronism should be supported by genetic confirmation. Therapy with fludrocortisone should be life-long administered in these patients and could be useful in order to ensure a good quality of life and may reduce long-term damage.

REFERENCES