

Division of Laboratory Medicine

Biochemistry

Aldosterone - Paediatrics

Measurements are used in the diagnosis and treatment of primary hyperaldosteronism, hypertension, oedematous states and other conditions of electrolyte imbalance.

General information

Collection container:

EDTA plasma (3.4 mL Sarstedt pink top)

Type and volume of sample:

1.0 mL whole blood is required, as a minimum volume.

If renin is also requested then two tubes are required for paediatrics.

Specimen transport/special precautions:

The tube should be thoroughly mixed before transport to the lab. Separate and freeze plasma immediately.

External labs: send frozen plasma on dry ice.

Laboratory information

Method principle:

Aldosterone concentration is analysed mass spectrometry.

Biological reference ranges:

Age	Aldosterone Concentration (pmol/L)
<1 month	139-4856
1-12 months	139-2498
1-2 years	194-1499
2-10 years	83-971
10-18 years	56-611

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Adult levels:

Up to 630pmol/L

Turnaround time:

1 month

Clinical Information:

Aldosterone secretion is stimulated primarily via the renin-angiotensin-aldosterone system (RAAS). The production of renin is stimulated when there is a reduction in the renal perfusion pressure, reduction in plasma volume and plasma sodium depletion. Renin cleaves angiotensinogen into angiotensin I which ultimately leads to the production of angiotensin II via the angiotensin converting enzyme. Angiotensin II acts on the vascular system causing vasoconstriction as well as stimulating the adrenal cortex to secrete aldosterone.

Aldosterone acts on the mineralocorticoid receptors within the principal cells of the distal tubule to increase sodium and chloride reabsorption and potassium and hydrogen secretion.

Aldosterone measurements are used in the diagnosis and treatment of primary hyperaldosteronism, hypertension, oedematous states and other conditions of electrolyte imbalance.

Interpretation of the results is dependent on concomitant drug treatment, electrolyte concentration (particularly potassium) and whether the patient was supine or upright at the time of sampling.

Factors known to significantly affect the results

- Grossly haemolysed samples are unsuitable for analysis.
- Grossly lipaemic samples are unsuitable for analysis.

(Last reviewed November 2019)