

DiaSorin

The Diagnostic Specialist

Improve the Hypertension Management

Ask for LIAISON® Aldosterone and LIAISON® Direct Renin Assays



FOR OUTSIDE THE US ONLY

**Improve the Hypertension Management
DiaSorin “The Solution”**




The Diagnostic Specialist

Hypertension worldwide estimation and risk




~31%

 of the population are **HYPERTENSIVE (HTN)**¹

Hypertension is a major risk factor for cardiovascular disease morbidity and mortality including myocardial infarction, congestive heart failure, stroke, renal disease and dementia.



10-30%


 of hypertensive patients are **RESISTANT HYPERTENSIVE (res-HTN)**²

Their blood pressure usually remains above 140/90 mmHg despite the appropriate lifestyle measures and the provision of at least 3 anti-Hypertensive drugs.

Res-HTN has been associated with a 1.1-3 fold increase in the risk of cardiovascular events.



10-20%

 of Res-HTN patients have **PRIMARY ALDOSTERONISM (PA)**³

Primary aldosteronism is a type of hormonal disorder that leads to high blood pressure. Currently, PA is detected late and hypertension-related events are estimated after a 12 years period.



Even in individuals presumed stable, **LESS THAN 1/3** are protected from subsequent strokes and heart attacks⁴



Diagnosis and treatment of hypertension



TODAY <4%

res-HTN patients tested

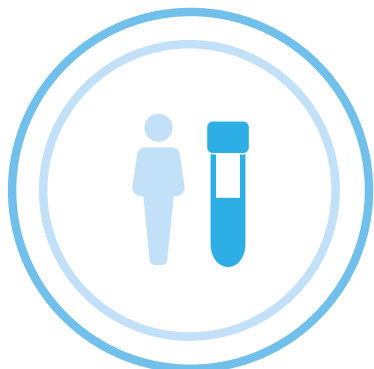
Too few Direct Renin/PRA and Aldosterone tests are prescribed by Specialists to exclude PA, leaving Renovascular Hypertension undiagnosed and untreated.



Patients stay in limbo with increasing health risks

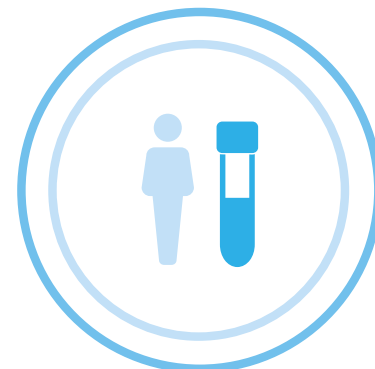


WHAT WE CAN DO



100%
res-HTN
patients tested

Test all res-HTN patients with Aldosterone and Direct Renin Assays for a rapid Primary Aldosteronism (PA) diagnosis.^{1,5}



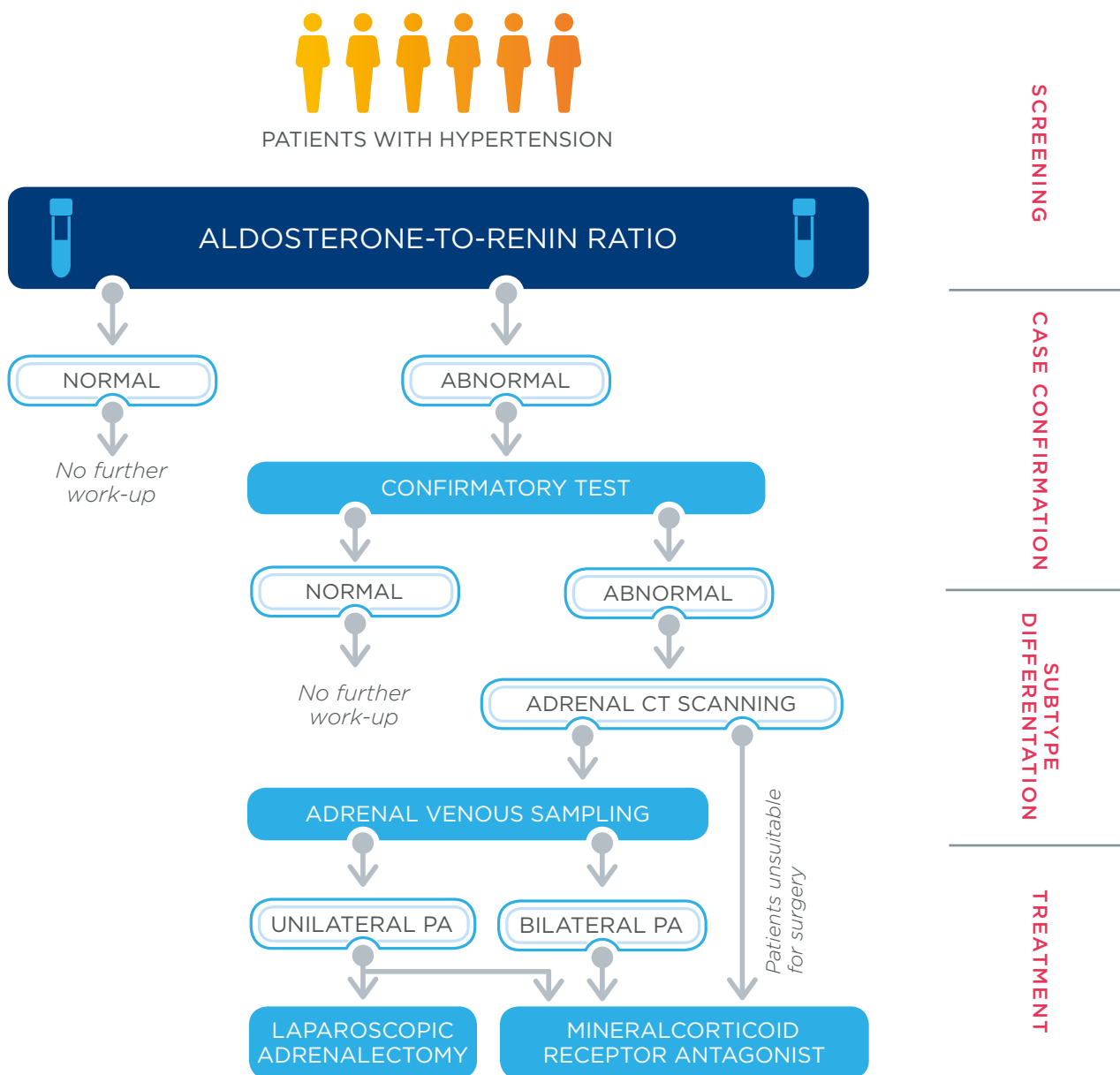
A key to success in reducing mortality

Early diagnosis of PA leads to the administration of effective treatments, which can reduce the impact and improve prognosis.

The solution: a simple test for PA diagnosis

Laboratory testing & diagnostic workup

The latest publication from Williams and Reincke⁶ underline the diagnostic approach for the management of PA already focused in the 2016's guidelines, highlighting the importance to screen the patients for the correct diagnosis of PA and define the Aldosterone-Renin-Ratio (ARR) at a very early stage of the diagnostic workup.



Measurement of plasma aldosterone concentrations (PACs) and direct renin concentration (DRC) to assess the ARR is the most reliable currently available method of screening for PA.

ARR concept

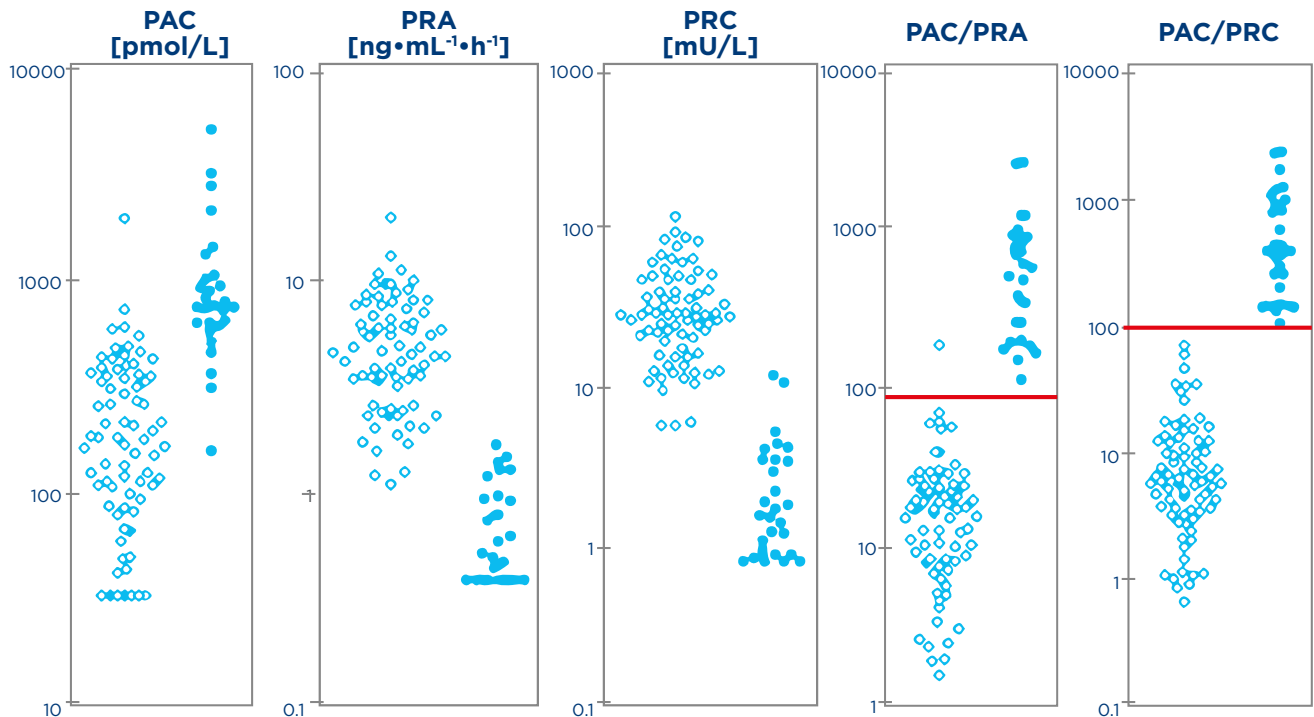
The power to discriminate using the ARR



Use of the ARR is:

- more sensitive than measuring potassium, aldosterone, alone
- also more specific than measuring renin alone⁷

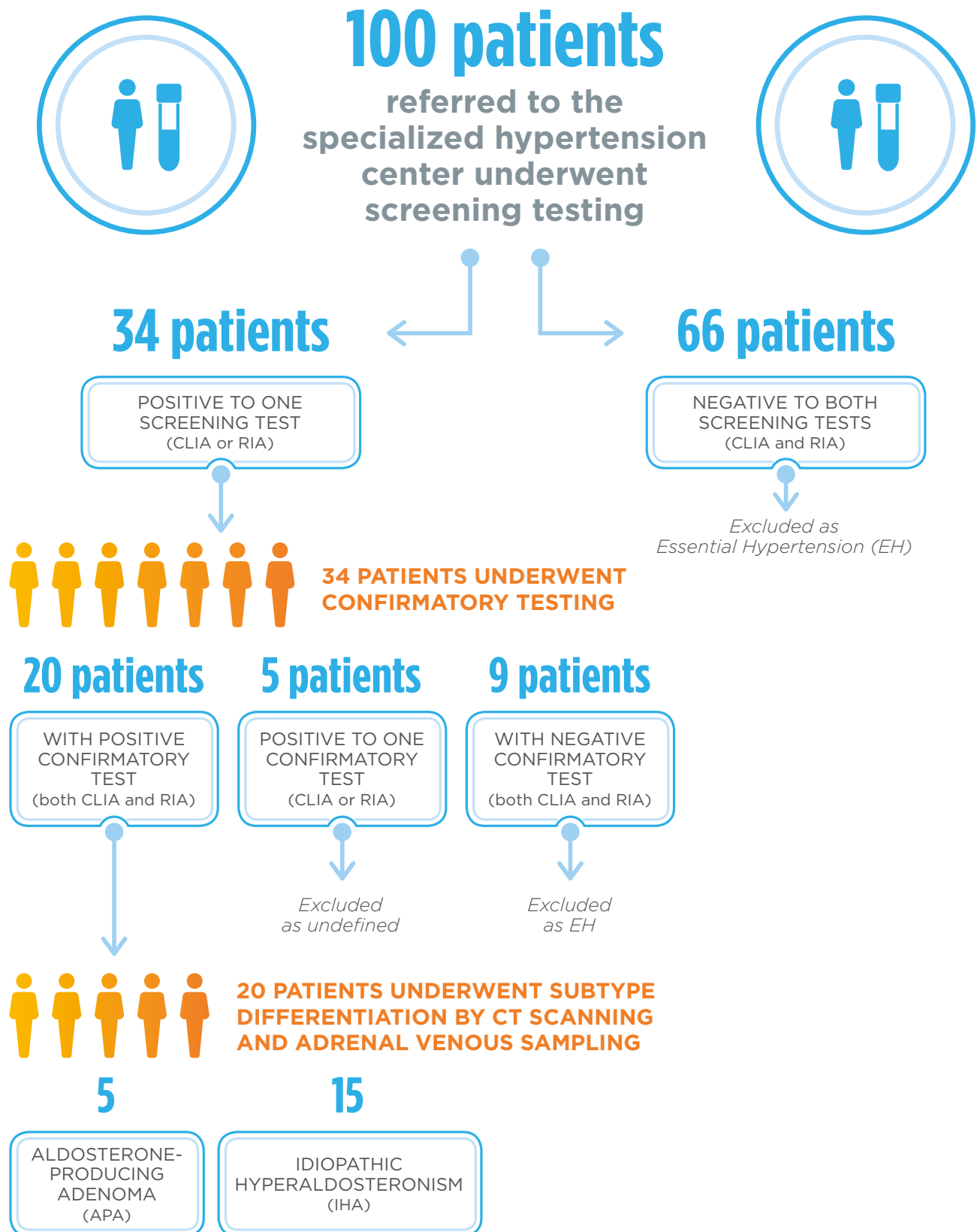
ARR: Good separation



LIAISON[®] ARR

Several publications are supporting the **usefulness of defining the ratio between aldosterone and renin (ARR)** to screen the patients with reliable immunoassays. Two important studies have been selected:

- a. The study from J. Burrello et al.⁸ based on 100 hypertensive patients with suspected primary aldosteronism. The algorithm show the patient selection and that 34/100 underwent confirmatory testing with saline salt loading or captopril test.

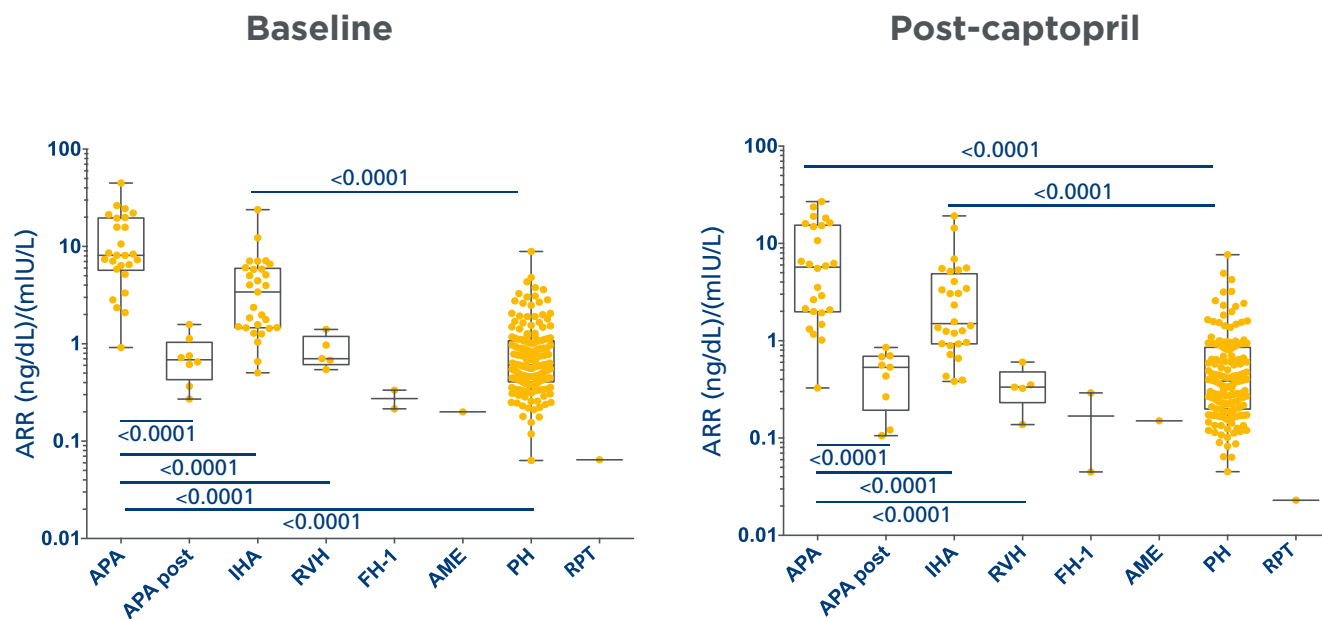


Results of the obtained ARR classified by the screened population are shown in the table:

	Total	EH	PA	P value EH vs. PA
Number of patients	100	75	20	-
Age (years)	49 ± 11	48 ± 11	54 ± 7	0.010
Sex (%) (M/F)	54/46	56/44	50/50	0.239
SBP (mmHg)	147 ± 17	146 ± 17	154 ± 18	0.053
DBP (mmHg)	91 ± 10	92 ± 9	92 ± 11	0.957
Kp (mEq/l)	4.0 ± 0.5	4.2 ± 0.4	3.6 ± 0.6	<0.001
PRA by RIA (ng/ml/h)	0.59 (0.15-1.71)	0.97 (0.32-1.99)	0.11 (0.10-0.28)	<0.001
DRC by CL (mU/l)	14.3 (4.3-28.2)	19.8 (10.3-35.5)	3.3 (2.7-4.1)	<0.001
AC by RIA (pmol/l)	471.6 (332.9-714.3)	416.1 (249.7-610.3)	707.3 (513.2-873.8)	<0.001
AC by CL (pmol/l)	375.9 (269.8-529.1)	313.5 (249.7-460.5)	558.9 (476.4-630.4)	<0.001
Pharmacological wash-out (%)	23	25.3	20.0	-

The Author concluded that the use of immunoassays like the LIAISON® Aldosterone and LIAISON® Direct Renin display satisfactory accuracy in the detection of primary aldosteronism.

b. Another study published by G.P. Rossi⁹ again confirmed the importance of the ARR in the patient workout. In this study 254 patients have been enrolled and 67.3% had primary hypertension, 17.3% an APA and 11.4% IHA, 2.4% renovascular hypertension (RVH) and the remaining 1.6% to other clinical hypertensive conditions like familial hyperaldosteronism (FH-1) or apparent mineralcorticoid excess (AME). Results are classified per patient disease comparing baseline values and depict after captopril testing.



The author concluded after an in depth discussion that the testing and the definition of the ARR, in patients adequately prepared from the pharmacological standpoint, when samples are properly collected and handled under carefully standardized conditions, the diagnostic performance of the ARR can be adopted in a wide range of clinical conditions.

DiaSorin Direct Renin and Aldosterone testing

The LIAISON® Direct Renin^{8,9,10} is:

The LIAISON® Aldosterone^{8,9,11,12} is:

Reliable

standardized to WHO IRP 68/356; provides accurate results to assist clinicians in the management of hypertensive patients

Reliable

quantitative determination of aldosterone in human serum, plasma and urine specimens

Efficient

simpler, faster, reproducible good alternative to Plasma Renin Activity (PRA) assays

Efficient

easier than mass spectrometry, faster and reliable with reduced intra laboratory variability and results

Flexible

highly suitable to improve laboratory workflow

Flexible

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LIAISON[®] Direct Renin and LIAISON[®] Aldosterone tests for PA's early diagnosis



The new combination of LIAISON[®] Direct Renin and LIAISON[®] Aldosterone automated assays allows meaningful PA diagnosis with a comparable specificity and sensitivity to existing methods.



When applying the proposed cut-off for ARR at 10-12 ng/dL/ μ U/mL provided by LIAISON[®] kits you can be assured of a higher sensitivity with comparable specificity to existing methods.



Patients with values greater than the selected ARR must be referred to an Hypertension Specialist for further PA investigation with confirmatory testing.

AVAILABLE ON LIAISON[®] SYSTEMS

Product availability subject to required regulatory approval

References

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