Improve the Hypertension Management

Ask for LIAISON® Aldosterone and Direct Renin Assays
Improve the Hypertension Management
DiaSorin “The Solution”
Hypertension is a major risk factor for cardiovascular disease morbidity and mortality including myocardial infarction, congestive heart failure, stroke, renal disease and dementia.

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

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.

Primary aldosteronism (PA) is a type of hormonal disorder that leads to high blood pressure. Currently, PA is detected late (8-12 years after onset of hypertension).
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.

**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.18

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.
Laboratory testing

- Prevalence of PA is higher than many doctors believe and it is not only restricted to hypokalemia cases
- PA treatment is available, therefore early diagnosis can reduce mortality and health care costs
- More diagnostic testing for PA is needed

Algorithms and cut-off

- A clear algorithm is possible: determination of Aldosterone to Renin Ratio (ARR) followed by confirmatory test is the method of choice
- Caution with units: the cut-off for screening and confirmation differ depending on units

LIAISON® Direct Renin and Aldosterone test for PA’s early diagnosis

The new combination of LIAISON® Direct Renin and 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 pg/mL/mU/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.
Aldosterone to Renin Ratio (ARR) concept

The power to discriminate using the ARR

Use of aldosterone to renin ratio (ARR) is:
- more sensitive than measuring potassium, aldosterone, alone
- also more specific than measuring renin alone

Study:
300 plasma samples obtained from subjects belonging to Normotensive subjects (N), patients with Essential Hypertension (EH) and with Primary Aldosteronism (PA) selected based on German Conn registry criteria were tested for LIAISON® Aldosterone and LIAISON® Direct Renin. In this study the Aldosterone concentration was expressed in pg/mL and the Renin concentration in μIU/mL. The ROC analysis has identified a range of ratio values between 9.5 to 12.0 that provide an adequate balance between sensitivity and specificity.

LIAISON® ARR

<table>
<thead>
<tr>
<th>LIAISON® ARR pg/ml μIU/mL</th>
<th>SENSITIVITY (PA)</th>
<th>SPECIFICITY (EH)</th>
<th>SPECIFICITY (N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.5</td>
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<td>80%</td>
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<tr>
<td>12.5</td>
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<td>86%</td>
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</tbody>
</table>

Dr. Bidlingmaier – Endocrine Research Laboratories Munich University - presented at Chicago ENDO 2014

PA= Primary HyperAldosteronism  
EH= Essential Hypertensive  
N= Normotensive
DiaSorin Direct Renin and Aldosterone testing

The LIAISON® Direct Renin\(^7,8,9\) is:

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

2. **EFFICIENT**  
   simpler, faster, reproducible good alternative to Plasma Renin Activity (PRA) assays

3. **FLEXIBLE**  
   highly suitable to improve laboratory workflow

The LIAISON® Aldosterone\(^10,11\) is:

1. **RELIABLE**  
   quantitative determination of aldosterone in human serum, plasma and urine specimens

2. **EFFICIENT**  
   easier than mass spectrometry, faster and reliable with reduced intra laboratory variability and results

3. **FLEXIBLE**  
   highly suitable to improve laboratory workflow

LIAISON® Direct Renin & Aldosterone tests to obtain 1 Aldosterone/Renin Ratio to early diagnose PA

Available on LIAISON® Systems

References

3. E. Pimenta and D.A. Calhoun, Circulation 2012;125:1594-1596
4. M.A. Acelajado and D.A. Calhoun, Journal of Hypertension vol 2011, article ID 837812, 7 pages
8. A. Morganti et al, Journal of Hypertension 2014 Vol 32 No 1