Anti-Phospholipase A2 Receptor

"PLA2R"

-اكتشف مؤخرا (٢٠٠٩) اجسام مضادة ذاتية قد تهاجم الكلى عن طريق تدمير مستقبلات تسمى

(basement membrane على Phospholipase A2)

-وهذا يتبعه مرض يسمى nephrotic syndrome يؤدى الى وجود بروتين كثيف فى البول

(Proteinuria) ثم فشل كلوى على المدى البعيد ثم الوفاه .

اهمية قياسه

١-وسيلة تشخيص شديدة التخصصية والحساسية للالتهاب الكلى الاولى حيث يوجد فى نسبة ٧٠-٨٠ % من المرض

٢-يفرق بين الاسباب الثانوية الاخرى والمشابهه فى ادرار بروتين البول كما فى

A- lupus nephritis

B- IgA nephritis

٣-يحدد مدى نشاط المرض

٤-يساعد فى تحديد نوعيات العلاج ومدى نجاحه

يقاس Anti-Phospholipase A2 فى عينة دم وهذا ذو اهمية قصوى مقارنة بما كان يتبع من اخذ عينة

انسجة من الكلى وفحصها عن طريق وحدة الباثولوجى وما يتكبده المريض من الام نفسية وعضوية

فى اخذ العينة وكذلك ما يتبعها من خطورة.

زيادة او نقص او اختفاء معدل الاجسام المضادة

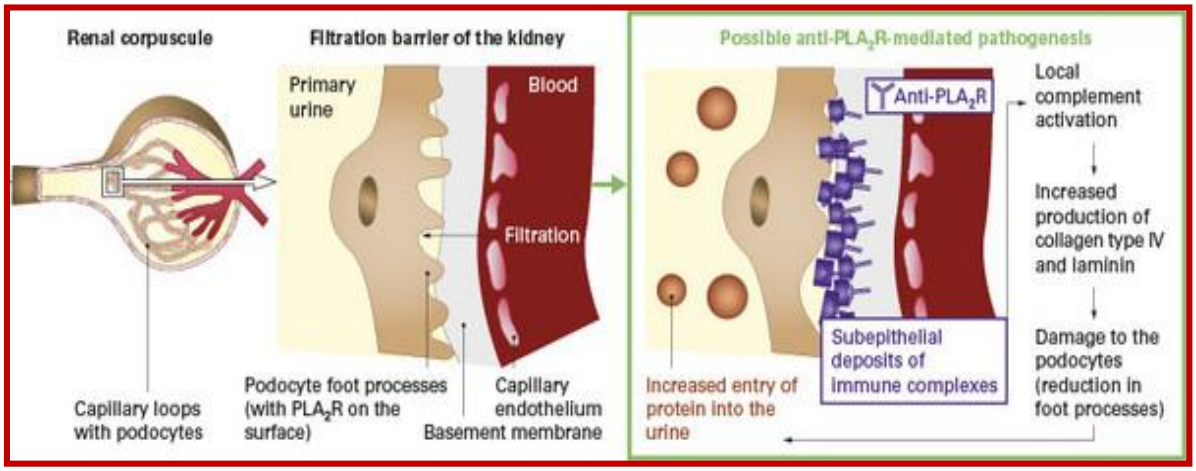
(PLA2R IgG titre)

يسبق الصورة الاكلينيكية للمرض من تحسن وتدهور لذلك فقياسه يعتبر عامل توقعى ومجس حقيقى للتشخيص والمتابعة وخاصة بعد تدهور حالات الزرع .

Anti-Phospholipase A2 Receptor:
A milestone in the diagnosis of MGN

- **Primary membranous glomerulonephritis (MGN)** is the most frequent kidney disorder with nephrotic syndrome with increasing proteinuria, the long-term risk of kidney failure with major morbidity and mortality rises.
- **The autoimmune mechanism of primary MGN was first discovered in 2009, as** the result of **autoantibodies reacting with phospholipase A2 receptor "PLA2R" (transmembrane glycoprotein),** which are expressed in human glomeruli on the surface of podocytes.
- **PLA2R autoantibodies** cause damage to the podocytes and lesions in the basement membrane.
- The barrier function is so strongly impaired that protein enters the urine causing **proteinuria.**

Diagnostic significance of antibodies against PLA2R



- Due to their high sensitivity and specificity for pMGN, circulating autoantibodies (IgG) against **PLA2R are an ideal diagnostic marker**.
- They occur in **70-80 % of patients** with pMGN, but not in patients with other glomerulonephritides such as lupus nephritis or IgA nephritis.
- **Detection of anti-PLA2R IgG aids the physician in**
  1. differentiating diagnosis of pMGN from secondary MGN.
  2. determining the disease activity
  3. deciding on the necessity and the type of therapy
  4. monitoring patients on therapy

Autoantibodies against phospholipase A2 receptors
The serological marker for primary membranous glomerulonephritis

▪ Measurement:

✓ **Anti-PLA2R ELISA (IgG)** is suitable for qualitative and quantitative detection of human autoantibodies of class IgG against PLA2R.

✓ **Advantages:** The serological detection of autoantibodies against PLA2R is not only easier than conventional histological investigation of renal tissue; it is less stressful for patients instead of kidney puncture; only a blood sample needs to be withdrawn.

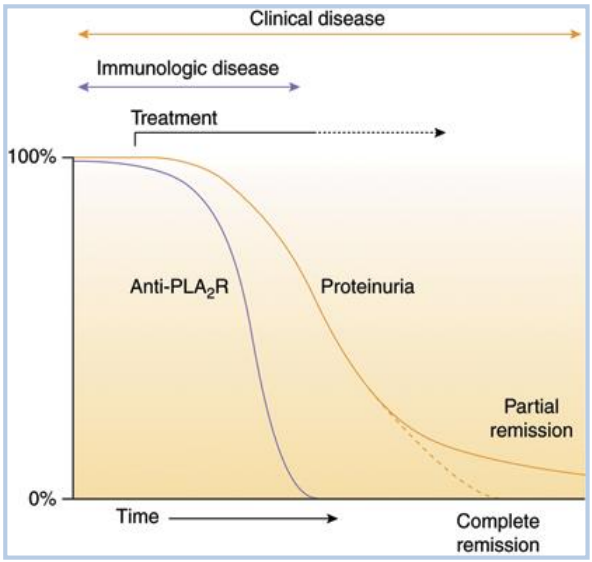
▪ Interpretation: Patient result may be

1. Negative: < ١٤ RU/ml
2. Borderline: > ١٤ to < 20 RU/ml
3. Positive: > 20 RU/ml

✓ The success of therapeutic measures can be assessed by means of **the anti-PLA2R antibody titer.**

✓ A titer increase, decrease or disappearance generally precedes a change in the clinical status.

✓ Thus, the determination of the autoantibody titer has a **high predictive value** with respect to clinical remission or relapse and estimation of the risk of relapse after kidney transplantation.



Anti-Phospholipase A2 Receptor (PLA_2R) in Serum Test is routinely done in al mokhtabar (Moamena Kamel) laboratories

Test Name	**Anti-Phospholipase A2 Receptor (PLA_2R) Test**
Sample Type	**Serum/Red Stopper Vacutainer**
Methodology	**Enzyme Linked ImmunoSorbent Assay (ELISA)**
Setup Time	
Turn Around Time	
Price	**450 L.E**
Precautions	**No precautions / instructions**
References	▪ Dähnrich C, Komorowski L, Probst C (EUROIMMUN AG) et al., Clin Chim Acta 421C:213-18 (2013). ▪ Hoxha E, Kneißler U, Stege G et al., Kidney Int. 82(7): 797-804 (2012). ▪ Gunnarsson I, Schlumberger W (EUROIMMUN AG), Rönnelid J, Am J Kidney Dis. 59(4):585-6 (2012). ▪ Hofstra JM, Debiec H, Short CD et al., J Am Soc Nephrol 23(10):1735-43 (2012). ▪ Hoxha E, Harendza S, Zahner G et al., Nephrol Dial Transplant. 26(8):2526-32 (2011). ▪ Debiec H, Ronco P, N Engl J Med. 364(7):689-90 (2011). ▪ Stahl R, Hoxha E, Fechner K (EUROIMMUN AG), N Engl J Med. 363(5): 496-8 (2010). ▪ Beck LH, Bonegio RG, Lambeau G et al., N Engl J Med. 361(1):11-21 (2009).