Kidney Involvement in APS

© Elaine Moore

A small number of patients with antiphospholipid syndrome develop an associated kidney disease or nephropathy caused by clots in the blood vessels that serve the kidneys.

What is Antiphospholipid Syndrome?

Antiphospholipid syndrome (APS) is an autoimmune disorder primarily characterized by abnormal blood clotting. The presence of blood clots in antiphospholipid syndrome can lead to miscarriages, deep vein thrombosis, and stroke. In addition, a small number of patients with antiphospholipid syndrome can experience kidney problems, which are referred to as extrarenal complications.

Renal complications can occur regardless of the type of APS (primary or secondary). It is estimated that about 1 percent of patients with APS are diagnosed with renal complications although the true incidence of renal complications is suspected of being higher.

The renal complications most often occur within the first five years of the diagnosis of antiphospholipid syndrome. The renal changes in APS may also be associated with abnormalities of the central nervous system, heart, and skin, related to arterial and arteriolar thromboses (blood clots). Blood clots impair blood circulation to organs and interfere with proper organ function.

Kidney Problems in Antiphospholipid Syndrome

Kidney problems known to occur in antiphospholipid syndrome include:

* APS associated nephropathy
* Glomerulonephritis
* Lupus nephritis

with coexisting systemic lupus erythematosus (SLE)
* Arterial hypertension
* Diffuse interstitial kidney sclerosis
* Pauci-immune vasculitis

APS Associated Nephropathy

In APS associated nephropathy, which is the most common extrarenal complication, thrombotic (characterized by blood clots) vascular involvement of the large and intrarenal small-sized vessels of the kidneys occurs. Symptoms vary in severity.
APS associated nephropathy can occur as a subacute or chronic condition characterized by proteinuria (excess urine protein) and hematuria (blood in urine) with mild kidney involvement. In extreme cases, APS associated nephropathy can progress to acute renal failure. One of the earliest markers of APS associated nephropathy is the inhibition of glomerular filtration. This causes a reduced creatinine clearance and early elevations of the blood urea nitrogen (BUN) and creatinine levels.

When the skin, heart and central nervous system are affected, APS associated nephropathy can result in generalized ischemic (lack of oxygen) damage to the organs. This condition, which is known as a vaso-occlusive process, may involve multiple organs. Over time, these changes can lead to progressive destruction of the kidney with focal atrophy of the kidney’s cortex.

**Viral Connection**

In patients with coexisting conditions of APS, systemic lupus erythematosus, and lupus nephritis, viral triggers have been implicated. Cytomegalovirus (CMV) is associated with arterial damage, and the development of Raynaud’s phenomena, whereas human parvovirus B19 has been associated with hematological changes such as severe anemia, low white blood cells (leucopenia) and platelet deficiencies (thrombocytopenia). No significant association has been made with the Epstein-Barr virus (EBV).

**Resources:**


The copyright of the article Antiphospholipid Syndrome in Autoimmune Disease is owned by Elaine Moore. Permission to republish Antiphospholipid Syndrome in print or online must be granted by the author in writing.