

14. Systemic lupus erythematosus (SLE) and the kidney

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What is SLE?

Systemic lupus erythematosus (SLE) is a chronic (long-term) inflammatory disease, which can affect the skin, joints and numerous body organs, including the kidneys.

It is much more prevalent in women and often affects them at a young age.

SLE is characterised by remissions and relapses. Relapses can be precipitated by exposure to sunlight, certain medications, stress, fatigue or infections.

What are the features of SLE?

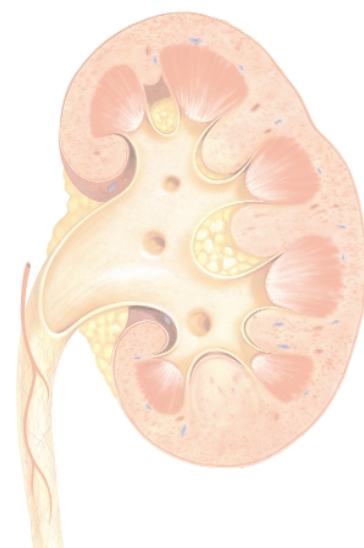
Because SLE can affect so many different parts of the body, it can present in many different ways. If the skin is involved there is a rash, particularly on the face and bridge of the nose in a 'butterfly' distribution, but any part of the skin may be affected and the rash is often exacerbated by exposure to sunlight. Joints may become painful and swollen. Involvement of the gastrointestinal tract, lungs, blood or nervous system may cause specific symptoms and there may also be non-specific symptoms such as fatigue or fever.

Although the kidneys are very often affected in patients with SLE, this is usually mild and not a cause of major concern. When the kidneys are involved this is known as **lupus nephritis**. In most cases the kidney involvement causes no symptoms and is only detected by specific tests. It is very often possible to control more serious involvement with medication. The situation can change during the course of the disease and thus different treatment regimens may be required at different times.

Occasionally, when the kidney involvement is more severe, the urine may become very frothy or smoky in colour due to the presence of excess protein. When the protein loss from the kidney is very heavy oedema (swelling) may occur. Rarely, excessive blood may be present in the urine, resulting in a red, pink, or smoky colour. Loin pain, which is usually of a dull aching character, may occur.

SLE is a chronic disease process, subject to exacerbations and remissions, and regular assessment is required to closely monitor for any complications.

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A GUIDE FOR PATIENTS

In the kidney, the inflammation affects the glomeruli (or filters). SLE can also affect blood vessels and other tissues, but it usually does not cause symptoms and in order to detect this special tests are required.

What is the cause of SLE?

The exact cause of SLE is unknown. The basic underlying process is the production of antibodies against the bodies own tissues. Antibodies are usually produced to fight off 'things' that are foreign to the body, such as infection. Activation of this part of the immune system, in turn results in inflammation. In the joints the inflammation results in joint pain and swelling while in the skin it causes rashes. In the kidney, the inflammation affects the glomeruli (or filters). SLE can also affect blood vessels and other tissues, but it usually does not cause symptoms and, in order to detect this special tests are required.

What tests may be required?

SLE is usually diagnosed by a combination of clinical symptoms and signs and **blood tests** such as tests for an antinuclear antibody (ANA) and anti-DNA antibodies.

Detection of kidney involvement can be achieved by relatively simple means such as **testing the urine** for the presence of protein or blood.

Valuable information about kidney involvement can also be obtained by examination of a urine sample under the microscope. This technique looks specifically for red cells, the number of red cells, the shape of the red cells, white cells and casts. Casts are little cylinders that form in the kidney when the kidney is inflamed. In general the more abnormal the urine is under the microscope, the more severely the kidneys are inflamed or involved.

A **24-hour urine collection** may also be requested to determine how much protein is being lost from the kidneys. Accurate assessment of the kidney function is necessary and can be accomplished by a test involving the collection of a blood sample and carefully timed urine collection.

If more serious kidney involvement is suspected a **kidney biopsy** may be recommended, as this may be the only way to assess the severity of the kidney involvement and determine the best approach to management (see also section 16).

What are the treatment options in SLE?

Treatment options are determined by the extent of organ involvement and the severity of the SLE.

Many patients in remission will require no treatment.

Others may require drugs for arthritis such as simple analgesics (aspirin or paracetamol), non-steroidal anti-inflammatory drugs (NSAIDS) and Plaquenil or chloroquine for skin involvement.

Treatment for kidney involvement is determined by its severity and if it is mild no specific treatment, apart from blood pressure control, may be required. In more severe cases drugs which suppress the immune system (immune-suppressive therapy) with prednisone alone, or prednisone combined with other immune-suppressive drugs such as cyclophosphamide, cyclosporin A, or azathioprine may be required. Rarely, in patients with severe disease, plasma exchange or plasmapheresis may be necessary. Such therapy, if instituted early, has excellent results with few patients losing renal function and developing end-stage renal disease.

SLE and pregnancy

SLE may develop or flare up during pregnancy or in the first six weeks following delivery. Special care by a combined team of doctors is needed during pregnancy.

A woman with SLE may be more likely to have a miscarriage. There is a greater risk of high blood pressure in these patients and other antibodies which affect blood clotting (lupus anticoagulants and anti-cardiolipin antibodies) may be present. There is a greater risk of the baby being premature and small.

