

## Patient information

# Autoimmunity

## Mixed Connective Tissue Disease (mixed CTD) and Undifferentiated Connective Tissue Disease (UCTD)

### Autoimmunity and Connective Tissue Disease (CTD)

The immune system normally produces antibodies which attack bugs (viruses, bacteria and fungi). Sometimes, for reasons we don't fully understand, the immune system goes into 'overdrive' and produces antibodies which attack the body's own tissues, causing inflammation. This is called **autoimmunity** and may cause an autoimmune disease. A common example of this is underactive thyroid where antibodies are produced which attack the thyroid gland.

The connective tissues are the structural portions of our body that essentially hold the cells of the body together. These tissues form a framework or matrix for the body.

### Connective Tissue Disease (CTD)

Connective tissue disease is an autoimmune disease where the body produces antibodies against its own connective tissue, causing inflammation.

The 'classic' connective tissue diseases include:

- Lupus
- Rheumatoid arthritis
- Scleroderma (or systemic sclerosis)
- Polymyositis and

- Dermatomyositis

Each of these diseases has a typical presentation with clinical findings that doctors can recognise during an examination. Each also has certain blood test abnormalities and abnormal antibody patterns. However, each of these diseases can start with very mild symptoms before developing the classic features that help in the diagnosis.

## **Undifferentiated Connective Tissue Disease (UCTD)**

Almost one in four people seen in rheumatology clinics develop an autoimmune disease which doesn't fit neatly into a category, so they are not given a definite disease label. When these conditions have not developed the classic features of a particular disease, doctors will often refer to the condition as "**undifferentiated connective tissue disease**" or **UCTD** for short. In other words the characteristic features of the classic connective tissue disease are not present, but some symptoms or signs of connective tissue disease exist.

People with UCTD may never develop a fully definable condition or they may eventually develop a classic connective tissue disease. Usually if the condition is going to evolve into a classic disease it does this within five years of diagnosis.

## **Mixed Connective Tissue Disease" (or mixed CTD)**

Mixed Connective Tissue Disease (CTD) is another phrase sometimes used, meaning an "overlap" combination of connective tissue diseases. It is often considered to be an overlap of three specific diseases: lupus, scleroderma and polymyositis.

Patients with this condition have features of each of these three diseases. They also typically have very high quantities of two particular antibodies: antinuclear antibodies (ANAs) and antibodies to ribonucleoprotein (anti-RNP) detectable in their blood.

The symptoms may eventually evolve into one of the three specific diseases. However these 'overlap' diseases can involve any combination of the connective tissue diseases, for example, patients can have a combination of rheumatoid arthritis and lupus (called "rhupus").

These conditions all exist on a scale from very mild to (much more rarely) very severe.

## **What are causes and risk factors for UCTD and mixed CTD?**

The most significant causes and risk factors for developing these conditions are certain gene patterns that are inherited from ancestors. There is no known environmental toxin that has been shown to cause UCTD.

## **What are the symptoms of UCTD and mixed CTD?**

The symptoms vary greatly from one individual to another. They include some or all of joint pain, joint swelling, skin rashes, kidney disease, breathing problems, heartburn or swallowing problems, mouth ulcers, skin tightening and thickening, muscle weakness, Raynaud's phenomenon (colour changes in the hands and feet on exposure to cold).

## **How are UCTD and mixed CTD diagnosed?**

Diagnosis of these disorders is made by putting together the patient's symptoms, examination findings and blood tests.

## **How are UCTD and mixed CTD treated?**

The treatment is based on which features are causing symptoms. The prognosis (outlook) varies accordingly.

In general, treatment is often directed at damping down the inflammation present in the tissues by using anti-inflammatory and immunosuppressant medications. These medications include non-steroidal anti-inflammatory drugs (NSAIDs), steroids (such as prednisolone), antimalarial drugs (hydroxychloroquine), and sometimes other immune suppressant drugs (such as methotrexate, azathioprine, cyclophosphamide and TNF inhibitors).

Treatment for high blood pressure may occasionally be needed to prevent damage to the kidneys.

Physical therapy (physiotherapy) for certain joints is sometimes helpful.

Heartburn can be prevented by elevating the head of the bed and can be relieved with omeprazole or lansoprazole. Antacids can also be helpful.

For Raynaud's phenomenon, patients are recommended to use hand and body-warming techniques while protecting the fingers from injury. Tablets such as

Nifedipine or Losartan, or nitroglycerin cream can be used to open up the blood vessels.

## **What is the prognosis of UCTD and mixed CTD?**

The outlook for UCTD very much depends on the location and intensity of the organs affected. Those who are treated and monitored early tend to have better outcomes.

People with mixed CTD are less likely to develop serious kidney or brain involvement than those with lupus. However lung problems are slightly more likely so your doctor should request regular screening tests (echocardiogram and lung function tests) for this complication.

## **Is it possible to prevent UCTD or mixed CTD?**

Unfortunately not, there is no prevention for mixed connective tissue disease.

We hope this leaflet has been helpful to unravel a little of what is a very complicated subject. If you have any questions or concerns, do speak to your specialist at the next appointment.

*Adapted from MedicineNet and UptoDate by Dr Catherine Bevington, Consultant Rheumatologist, West Suffolk NHS Foundation Trust.*

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