

MGR. Non-Amyloid Monoclonal Gammopathy of Renal Significance

NIHR BioResource – Rare Diseases study project

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Summary

Monoclonal Gammopathy of Renal Significance (MGRS) is a group of conditions which may present with a wide variety of symptoms mainly resulting from damage to the kidneys by an abnormal protein produced from the bone marrow. Most people will have a problem detected through blood tests showing an abnormal protein produced from the bone marrow and abnormal kidney blood tests showing that the kidneys are not cleaning blood normally. A renal biopsy is needed to confirm that a person has MGRS as the diagnosis is made by a pathologist looking down a microscope at the kidney biopsy and special tests on the kidney biopsy. Without a biopsy it is not possible to be sure that the kidney damage is not due to other more common causes. Some people may have no symptoms at all as their condition may have been picked up early by chance through routine testing of blood whilst others may feel unwell. Kidney failure is making them feel unwell due to problems with excess fluid and inability to maintain normal balance of salts and proteins in the blood. Swelling of the ankles is common and if there is too much fluid in the body this can also cause shortness of breath. These symptoms may be associated with all of the MGRS conditions.

What can be done about it?

For some people if the kidney function is stable and the level of protein leaking through the kidneys is low then your consultant may just monitor your blood tests and see if anything is changing over time. If the amount of protein in the urine is quite a lot or the kidney function is getting worse over time, then treatment to reduce the bone marrow protein may be indicated. This treatment is with chemotherapy to suppress the abnormal cells in the bone marrow which are producing the toxic protein in order to reduce the amount of toxic protein. The type of chemotherapy used is the same as for a condition called myeloma.

How the disease works:

Monoclonal gammopathy of unknown significance (MGUS) is not a cancer. It is a condition where an abnormal protein is being made in the bone marrow. This protein is called a paraprotein or M-protein. It is found in the urine or blood. Most people who have a paraprotein are not found to have problems or symptoms because of it and they are monitored to check that the amount is not increasing and it is not causing damage to the body. Very rarely a low level of paraprotein in the blood can affect the kidneys through various ways. When the paraprotein is found to be toxic and causing damage to the kidney we call the process Monoclonal Gammopathy of Renal Significance (MGRS). Your kidney specialist will have picked this up by doing a kidney biopsy. When the connection between the bone marrow protein and the kidneys is made some people may benefit from treatment to stop the bone marrow making the paraprotein. The hope is that this stops further damage and often (but not always) leads to an improvement in kidney function.

Some people with an MGUS can develop a blood cancer called Myeloma. Myeloma is much less common than MGUS and most patients with MGUS do not develop myeloma. Myeloma is when there are too many cells in the bone marrow producing a paraprotein and is often an aggressive condition leading to bone damage, anaemia, infections and often damage to the kidneys with blockages in the kidneys from the paraprotein; this is called cast nephropathy. In this case, chemotherapy is needed to stop the myeloma from producing the protein as kidney failure can occur quickly.

Recruitment Criteria

Inclusion

Patients must have renal biopsy confirmation of the following listed conditions:

- Light chain proximal tubulopathy (with or without Fanconi syndrome)
- Crystal storing histiocytosis
- Fibrillary Glomerulonephritis
- Type I and type II cryoglobulinemic glomerulonephritis
- Immunotactoid glomerulonephritis
- GOMMID (glomerulonephritis with organised microtubular monoclonal Ig deposits)
- Light Chain Deposition Disease
- Light and Heavy Chain Deposition Disease
- Heavy Chain Deposition Disease
- Proliferative Glomerulonephritis with Monoclonal Ig Deposits
- Macroglobulinemia
- Mesangiocapillary glomerulonephritis secondary to Waldenstrom macroglobulinemia