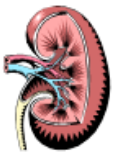

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in the interest of public health education.
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Glomerulonephritis Information Sheet

What is glomerulonephritis (gn)?

Glomerulonephritis is the medical term for inflamed kidney filters. Often the name is shortened to nephritis or gn. There are many causes of inflamed kidneys.

Some common types of glomerulonephritis are:

- Minimal change nephritis
- Membranous nephritis
- Focal and segmental glomerulosclerosis (FSGS)
- Post-infectious glomerulonephritis
- IgA nephritis (nephropathy)
- Lupus nephritis.

Sometimes nephritis is replaced with the term nephropathy – which means "something wrong with the kidney".

Some glomerulonephritides are mild and cause few long term problems, and some are troublesome, and can cause kidney failure and the subsequent need for dialysis or kidney transplantation.

What do the filters do?

One of the many functions of the kidneys is to filter, or clean, the blood of waste products. When the filters are inflamed, the body's waste products accumulate in the body, and cause symptoms.

Together both kidneys make about 180 litres of filtrate (which subsequently becomes urine) per day, fortunately most of it is reabsorbed by the kidney tubules before it reaches the bladder! There is about 50 kilometres of tubules in each kidney. Each kidney has about one million filters. Once the filter is damaged and scarred, it cannot regrow. It is lost forever. Only the remaining filters can now pick up the work of those that have scared and no longer function.

What causes glomerulonephritis?

Sometimes part of the immune system goes haywire, and instead of protecting us, the immune damage starts to destroy us. Sometimes the kidney is on the receiving end of this.

Post-infectious gn can be caused by a Streptococcal infection (a common bacterial infection) in the throat. Some cancers are rarely associated with some glomerulonephritides - especially minimal change and membranous nephritis.

What are the symptoms of glomerulonephritis?

The symptoms suffered depend upon which type of glomerulonephritis, and how quickly the gn develops.

Symptoms include:

- Blood in the urine
- Swelling of the legs
- Eyes and wrists
- Frothy urine.

Generalised, non-specific symptoms include:

- Tiredness
- Nausea
- Joint aches
- Rashes

Other findings include:

- Protein and blood on urine testing
- High blood pressure
- Abnormal kidney function (high urea and creatinine)

In most cases it is necessary to perform a kidney biopsy. This involves removing a small piece of tissue with a fine needle passed through the back under ultrasound guidance into one of the kidneys. A local anaesthetic is given. The gn will be affecting both kidneys equally, so only one needs to be biopsied to get the information required.

Can glomerulonephritis be treated?

Not all gns require treatment. Not all are treatable. Early presentation and diagnosis of a treatable gn allows early treatment before permanent scarring may have developed.

Most treatments involve anti-inflammatories and / or strong anti-immune system (immuno-suppressive) medications. Commonly used medications are prednisone, cyclophosphamide, mycophenolate, azathioprine and cyclosporine.

Treatment often requires admission to hospital in the first few days, and frequent monitoring of blood and urine tests as an out-patient. Treatment will require frequent visits to a kidney specialist/nephrologist/renal physician.

Can glomerulonephritis be prevented?

Unfortunately most types of gn are not preventable. Although a lot is known about many gns, a lot of research still is necessary, both in identifying causes and treatment therapies. Reduced infection risk with good hygiene and avoiding overcrowding can reduce post-infectious (post-streptococcal) gn.

Glomerulonephritis is more common in Maori and Pacific Islanders. These Polynesians are also more likely to get the more serious forms of gn that progress to kidney failure.

Glomerulonephritis is the second to most common cause of kidney failure, requiring treatment in the form of dialysis or kidney transplantation, in New Zealand. Approximately 25% of patients on dialysis or with a kidney transplant in New Zealand have glomerulonephritis as the primary underlying cause.

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This glomerulonephritis information sheet is produced as introductory information on kidney health for the consumption of the general public seeking further information; and families and patients suffering from kidney disease in the interest of general education. This information sheet is not a replacement for good medical advice and care. This information should be used as an adjunct to any reputable therapy and information from your health professional. The information herein is written expressly for consumption within the practice of medicine and nephrology within New Zealand. Whilst much of its content may be applicable to the practice of nephrology in other countries or situations, it should be read with this limitation in mind.