

Living with primary immunodeficiency

Bianca Pizzera
IPOPI, Arona, Italy

When you tell people you have a medical condition it usually relates to one organ or part of your body and it is usually a specific condition.

This is not so with primary immunodeficiency.

The primary immunodeficiencies are a collection of disorders and they total well in excess of 100 conditions in the recent classifications. Those conditions relate to defects in the T-cells, the B-cells and combinations of the T and B-cell disorders. In addition there are disorders of the complement system, including hereditary angioedema. All the conditions are potentially life threatening and this is increased when diagnosis and entry to appropriate therapy is delayed.

Other examples of primary immunodeficiency would include the antibody deficiencies – for example CVID (common variable immunodeficiency); XLA (X-linked agammaglobulinaemia) and Hyper IgM Syndrome; SCID (severe combined immunodeficiency) or baby in the bubble syndrome which is characterised by exceptionally severe infections from birth and a bone marrow transplant – or gene therapy in the absence of an appropriate bone marrow donor – is the only way to overcome those severe infections. Otherwise a baby could die in the first few months of life. Then there is neutropenia – a reduction in the number of ‘scavenging’ cells that kill most micro-organisms that enter the blood system. Symptoms of neutropenia include skin and lung infections, ulcers and septicaemia. Other conditions include CGD (Chronic Granulomatous Disorder) with susceptibility to infections of the lymph glands, chest, skin and particular vulnerability to fungal infections; Wiskott Aldrich Syndrome – a complex condition with infections of the ear, sinus and chest with spontaneous bleeding, bruising and eczema; and DiGeorge Syndrome where the thymus is missing leading to viral and fungal infections and with associated problems of the heart and with muscular spasms and, commonly, learning difficulties.

CVID is a complex condition and indeed genetic research may well show it to be a package of conditions rather than one simple single disorder. CVID is not evident from birth although undoubtedly genetic in its origins. It is what is known as a ‘late onset’ disorder and it may be diagnosed from any age after birth. Speedy diagnosis is so important: a delayed diagnosis is a major danger to the health of the individual. Too often doctors are puzzled by someone whose health suddenly changes and they become prone to severe recurrent infections and too often doctors imagine that this is due to psychological problems on the part of the patient (or their parents if a child

is involved) and a reference to a psychologist is not infrequent as a first step on the road to diagnosis.

So, not one simple condition although there is a growing evidence from recent research that many – if not all – of the conditions have a genetic base and as such are inherited and ‘primary’ disorders of the immune system as opposed to ‘secondary’ or acquired defects of the immune system and, again, distinct from the problems of auto-immunodeficiency.

In one short chapter it is not possible to deal with the problems of living with all those conditions, so I will write about the condition of which I have most experience through having a son with a primary antibody deficiency – XLA – X-linked agammaglobulinaemia, to which I referred above.

Until diagnosis is made a patient will experience infections of frightening severity. What to the rest of us is a cold lasting a day or two can develop into major chest infections often culminating in pneumonia. In a similar way, a minor tummy upset that would affect someone with a complete immune system in a fairly way, to a person who lacks an immune system, or who only has a partial immune system, the problems will be severe, serious and debilitating. It is therefore essential that people who know they are prone to those severe infections avoid places and situations where they are likely to be exposed to infection – e.g. long-haul flights on airlines, schools, and possibly even hospitals!

Once diagnosis is made life will become easier once treatment with immunoglobulins begin and take effect.

Immunoglobulins are derived from human plasma and will continue to be a biological product into the foreseeable future. While in the past there have been major problems for users of plasma products those have been restricted to users of coagulation products, used in the treatment of the haemophilias. No major problems have arisen from immunoglobulin therapy although, in the past – and not for the past ten years – there have been problems with hepatitis C. In those current days of advanced technologies in the collection and processing of plasma, it is hoped that none of the past problems will re-appear. It is a great comfort that regulators and manufacturers strive now to work together to ensure safe supplies of plasma derived medicinal products for all patient needs.

So to immunoglobulin therapy. Initially this will be given in hospital by intravenous infusion. It must be very clearly understood that there are several different immuno-globulins (Ig) on the market. Not every product will suit every patient and unacceptable reactions may occur from one product and not from another. This happens because there are differences in the production processes used and one product will suit this patient, while another product will produce severe and unacceptable reactions.

The volume of Ig infused will depend on national standards but will be governed by the weight of the patient and influenced by the nature of the antibody deficiency. Infusions can take several hours and, again, this is down to a matter of personal tolerance – some people can receive their intravenous (IV) Ig fairly quickly with no

side effects whereas others need to take it more slowly to avoid headaches and so on. Sometimes people expect a sudden and dramatic improvement in their health after the first infusion – it is more usual for this to take four or more three-weekly infusions before any change is felt – and this will depend very much on how long the patient has been ill without diagnosis before entering treatment.

In time, if the patient and medical staff agree, it is possible to move to home therapy. This is much more convenient for the patient – no need to lose time from employment or education! There is a period of initial training and everyone must have a ‘buddy’ – someone who will be there while they have their infusion and know what to do in the unlikely event of an emergency. After that it is very much over to the patient – they can infuse at weekends, in the evenings, while studying or watching television. It is of course essential to stay in close touch with the medical staff, to keep the records required by your hospital and to attend the regular review clinics when you are required to do so.

In recent times, led by Sweden, there has been a growing move to use subcutaneous (SC) infusion rather than IV infusion. In many ways SC infusions are easier still for home therapy – no need to fish around for a vein to infuse – just pop it into the fatter fleshier bits of your body. This is done using a battery driven pump and again, is very convenient.

However, it should be noted that immunoglobulin is not universally available, nor is intravenous or subcutaneous therapies.

As therapy continues, so should life-style improve. Patients almost inevitably need to use antibiotics to fight any infections that breakthrough but the ability to participate in a full life will improve dramatically. But the basis of that improvement does rely on an early diagnosis. The importance of an early diagnosis cannot be overemphasised. Otherwise the irreversible damage sustained pre-treatment will grow and the overall cost of the national health scheme and all to the detriment of the patient.

The most important single factor is diagnosis – otherwise we are needlessly dealing with a life threatening disorder. The failure to diagnose – and in some cases diagnosis remains to be made after 30 or more years! – that failure to diagnose leads to expensive hospital stays, expensive treatment with pointless medicines that attempt to treat symptoms rather than the root cause of the symptom, and usually an unproductive patient who becomes a liability on his family, friends and society through not being able to work productively and earn a wage. In our own case, our son was diagnosed at the age of four and put onto therapy with immunoglobulins virtually straight away. We recognise that we are fortunate in this respect and acknowledge that this is not the experience of all families.

At the point of diagnosis there were many emotions – getting to grips with facing a chronic condition of which we had no prior knowledge alongside the relief of knowing that the doctors knew the nature of the problem. It takes time to learn how to live with primary immunodeficiencies but after the first few months of treatment we began to see improvements in his health, gradual at first but growing every week.

It is also important for the newly diagnosed and the parents of newly diagnosed children to know that they are not alone in their problems. Joining the national patient organisation – or working to form one if it does not already exist – will be a liberating experience. It is also very important to be very positive about the way ahead: it is not helpful to you, or your child if you're a parent, to view yourself subjectively as a suffering victim. What is important, as the title of this chapter implies, is to be positive and aim to LIVE life to the fullest possible extent alongside a chronic health problem. The victim mentality is not helpful and must be discouraged by everyone involved in the care of a patient or family where a primary immunodeficiency – or any other chronic illness – is concerned!

As mentioned, the role of a national patient organisation can be crucial and if you do not have one in your country you should certainly work towards having one – with your medical staff and with the International Patient Organisation for Primary Immunodeficiencies (IPOPI). Through a national patient organisation you can collect experiences, meet others who have problems similar to your own, and, most importantly, speak with a single loud voice that politicians and health policy makers will have to listen to. We certainly found our involvement in the formation of our national patient organisation to be a healing and positive process.

And political engagement is of very great importance. It is essential that you, through your national patient organisation, become part of the political process in your country: make yourself a positive and constructive nuisance at your national health ministry and with those who make decisions that affect your life or the life of someone you love. Learn how to do this – talk to and listen to others who have followed this same process before you – and in the process you will learn the very great importance of LIVING with your primary immunodeficiency. Again, remember that you or your loved one LIVE with their condition and they are not 'victims' – to think victim is to think negatively and that is dangerous for your health.

Go out – find and define your friends in the battle to live with primary immunodeficiency. There will be those who will think you have AIDS: there are always people out there who do not listen and who cannot understand and who cannot be educated.

Dig deep in your search for friends – and do not forget the role played by the plasma derivative industry. There are those who think that the plasma industry has patients 'wound around their little finger': that way of thinking is both dangerous and insulting to patients and their organisations. Like most friends, we hold things in common and we hold things at a distance: so with industry and patients! Industry can be a firm friend.

But there are other friends: your local politician may well become a true friend in persuading the authorities to respond to your need – remember that she or he will be wanting votes at the next election! And politicians can be an entry to an array of other helpful people – do not forget that your local politician will be well connected to all sorts of 'people in power' at your local and neighbourhood level to whom you might not ordinarily have access. So make friends with your local politicians.

Then there is your doctor. Doctors are exceptionally hard working people and they may often seem to treat you as 'just another patient' – but they will be interested in you and may share many of the concerns worry you as well. Try to find a time to have a persuasive chat with your doctor about anything that you as a patient could do to ease his or her burden. You will often find that quite word much more productive than any amount of shouting you might do when you are upset about something! And what I have just said about doctors goes equally well for our immunology nurses – many of them are run off their feet and are deeply committed to their patients. Encourage them and see if there is anything you can do to work with them to improve diagnosis and therapy at a local level.

You are not alone: there are many, many, others just like you working towards living with a chronic health condition and some will also have a primary immunodeficiency just like you. Find friends, make friends and keep friends – and learn how to work together because one loud and united voice is better than many small whispers!