New Developments in Antiphospholipid Syndrome (APS)

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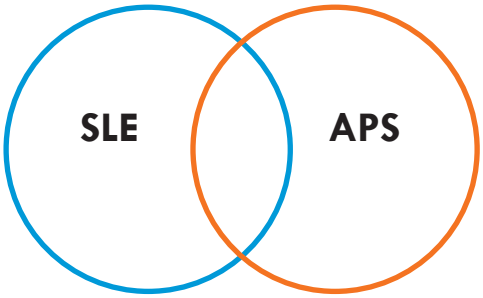
In the early 1980s Graham Hughes and his team, working in London, described a subgroup of patients with lupus who had increased risk of developing clots, strokes or miscarriages associated with the presence of particular antibodies in their blood.

The antibodies were called anti-cardiolipin or anti-phospholipid antibodies (phospholipids are substances that are key components of the outside walls of cells, and cardiolipin is one type of phospholipid). The condition in which these antibodies cause clots, strokes or miscarriages was therefore called the antiphospholipid syndrome (APS). Although it was originally described in lupus patients, it soon became clear that APS could also occur separately as a disease in its own right. This is called primary APS. The best way to think of lupus and APS is as two overlapping and closely related diseases. Thus there are many people who have both conditions at the same time.



The treatments of lupus and APS are very different. Whereas patients with lupus are usually treated with drugs that suppress the immune system, like steroids, those drugs don't work in APS. The main point of treating APS is preventive – to stop a patient getting a life-threatening clot or a stroke and to stop pregnant mothers from having miscarriages. APS can be a devastating disease. For example, it is one of the most important causes of strokes in people under 50 and, before appropriate treatment was discovered, women with APS might suffer the loss of three or more pregnancies one after the other.

Up till now, the only treatments known to be effective in patients with APS were drugs to thin the blood and stop it clotting. The best known of these drugs are warfarin, which is a tablet, and heparin, which is given by injection. Typically, a patient who has suffered a clot or stroke and who has been found by blood tests to have APS will have to take warfarin for many years (possibly lifelong). This is not ideal, because taking warfarin can increase the risk of bleeding and patients require regular blood tests to make sure the blood is thinned to exactly the right level. Pregnant women cannot take warfarin because it harms the baby so they need to take aspirin tablets and give themselves heparin injections throughout pregnancy.

However, over the last few years there have been a number of exciting developments in the field of APS in the UK. Many of these have been supported by APS Support UK, a patients' organisation similar to LUPUS UK that aims to support patients with APS. One of the main issues raised by those patients is that the diagnosis of APS may not be recognised and treated as early as it could be. Clots, strokes, and miscarriages are all sadly common events and unless one is aware that APS could be a possible diagnosis the key blood tests to diagnose it may not be requested. To counter this problem, APS Support UK worked with the Committee updating the National Clinical Guidelines for Stroke in 2016 so that, for the first time, these guidelines now indicate that patients admitted to stroke units should be tested for APS if certain conditions hold, for example they are under 50 or have a history of lupus.

In addition, APS Support UK has partnered with the Royal College of General Practitioners to produce an on-line learning module to help GPs recognise the syndrome and refer patients appropriately for specialist care. The charity has a flyer about the course that patients can give to their GPs.*

In terms of treatment, a recent clinical trial carried out at University College London Hospital and St Thomas' Hospital compared warfarin with a new blood thinning agent called rivaroxaban. Rivaroxaban has a number of potential advantages over warfarin, most notably the fact that patients do not need to have regular blood tests. However, it was important to carry out a study showing that it was as effective as warfarin in patients with APS. The results of the study were promising and suggested that rivaroxaban can be as effective as warfarin in many patients with APS - though we don't have evidence for patients with the highest risk of clots (for example those with very high levels of antiphospholipid antibodies in their blood). Further research must be done.

Our research group at University College London has been working for the last decade on development of a potential new treatment for APS that does not thin the blood but instead blocks the antiphospholipid antibodies themselves. This involved finding a way to engineer bacteria in the laboratory to produce large quantities of the blocking agent, purifying it, modifying it chemically to a form suitable for use as a drug and then testing it for the ability to block antibodies that we collected from the blood of patients with APS. The results so far have been promising enough that we were recently awarded a £3.5 million grant by the Medical Research Council to pursue this research project.

In summary, these are exciting times in the field of APS. Patients and researchers are working together to improve the diagnosis and treatment of this disease, which was first diagnosed in patients with lupus and has always been closely associated with it.

*Copies of the flyer are available from the charity office: email **info@aps-support.org.uk** or phone **0300 323 9943**. They are also available on the APS Support UK website **www.aps-support.org.uk**