All-Party Parliamentary Group on Stem Cell Transplantation
Future Use of Stem Cell Transplantation
Wednesday 17 January 2018
15.00-16.00
Committee Room 6, House of Commons

1. Summary

The meeting provided an opportunity for attendees to learn about the use of hematopoietic stem cell transplantation (HSCT) as a treatment for Multiple Sclerosis (MS) and Crohn's disease. The All-Party Parliamentary Group on Stem Cell Transplantation (APPGSCT) was delighted to be joined by:

- **Professor John Snowden**, Consultant Haematologist and Director of Blood and Marrow Transplantation, Sheffield Teaching Hospitals NHS Foundation Trust
- **Professor Basil Sharrack**, Consultant Neurologist and Director of the Sheffield MS Research Clinic, Sheffield Teaching Hospitals NHS Foundation Trust
- **Professor James Lindsay**, Consultant Gastroenterologist, Bart's Health NHS Trust, and Professor in Inflammatory Bowel Disease, Queen Mary University London
- **Colette Beecher**, Patient Representative
- **Caroline Wyatt**, Patient Representative

2. Opening remarks

Chair of the APPGSCT, Mark Tami MP, welcomed everyone to the meeting and introduced the speakers.

3. The clinical perspective

a) Professor John Snowden

Professor Snowden highlighted that HSCT is not a new therapy as sometimes implied by the media; it has been widely used for many years to treat blood cancer and other blood disorders. It is now been increasingly applied as a treatment for autoimmune diseases, such as MS and Crohn's disease, and rheumatological diseases, such as systemic sclerosis.

He explained how HSCT works: blood stem cells are collected by a process called apheresis. Following this, the bone marrow and immune system are wiped out using high dose chemotherapy, and then the blood stem cells are re-infused into the bloodstream. The most common means of delivering HSCT is to use a patient's own blood stem cells, which is termed autologous HSCT. The autologous HSCT process essentially re-sets or re-boots a patient's immune system.

Professor Snowden went on to say that autoimmune diseases, such as MS and Crohn's disease, affect up to 8% of the population. Although autoimmune diseases can be controlled in most cases, cure remains elusive and almost all patients with severe autoimmune diseases require long-term treatment. People often experience side-effects from this treatment, which in addition to the autoimmune disease itself, has an impact on their quality of life and survival. Furthermore, such treatments are often expensive and because of increasing disability, patients are less able to work aso there is a wider societal impact. There is therefore a desire for a one-off intensive means of disease control, which is where HSCT comes in.

The number of patients receiving HSCT for autoimmune diseases is generally increasing year-on-year, with the UK ranking fourth behind Italy, Germany and Sweden. The predominant indications are MS, systemic sclerosis, and Crohn's disease.

Professor Snowden concluded by saying that that not all autoimmune diseases are severe enough to require HSCT, and there were still costs and side-effects to consider. More research is required.

b) Professor Basil Sharrack

Professor Sharrack spoke in more detail about using autologous HSCT as a treatment for MS. First he explained that 1 in 1,000 people in the UK have MS, which is a disease of the brain and spinal cord. Auto-reactive cells attack the nerves and their protective outer coating (the myelin sheath), leading to nerve

damage and a variety of symptoms such as problems with speech and movement. The causes of MS are unclear and the economic burden is large.

Professor Sharrack went on to describe current strategies for treating MS using disease modifying drugs. These drugs are costly and he explained that, while HSCT may appear expensive upfront in comparison, it can be cost-effective in the long-term as it is a one-off treatment.

He said that the aim of using autologous HSCT to treat MS is to get to a point where the patient shows no evidence of disease activity, defined as no relapses, no sustained disability progression and no MRI activity. Early studies have shown that reversing disability may be possible. A randomised phase III trial (MIST) is underway to confirm these results.

c) Professor James Lindsay

Professor Lindsay focused on autologous HSCT as a potential treatment for Crohn's disease. He started by explaining that Crohn's disease is an inflammatory disease of the intestine, caused by a dysregulated immune response to intestinal bacteria. There are also genetic and environmental risk factors. It affects approximately 100,000 people in the UK, particularly young adults. Symptoms include diarrhoea, abdominal pain and fatigue. Crohn's disease can be extremely distressing and have a significant impact on quality of life and work productivity, which may translate into anxiety and depression.

Current medical therapies, such as steroids, immunosuppressants and biologic therapies aim to supress the immune response that causes disease. However, they are not effective in all patients and are associated with a burden of side-effects. Biologic therapies now account for up to 70% of the cost of treating patients with Crohn's disease. Despite best medical therapies, up to 50% of patients will require surgery to remove part of the intestine, after which the disease may return in many patients.

Professor Lindsay said that the interest in using autologous HSCT to treat Crohn's disease came from serendipitous cases. The first controlled trial of autologous HSCT in Crohn's disease showed that few patients experienced complete disease regression, but many had a significant improvement in disease activity and quality of life. However, the procedure was associated with significant side-effects in some patients.

A new National Institute for Health Research (NIHR) funded clinical trial called ASTIClite is now recruiting 99 people with refractory Crohn's disease to assess whether a lower intensity regimen will reduce the side-effects but still show benefit. It will run across eight centres between April 2018 and March 2021. Participants will be randomised to receive low-intensity HSCT or standard care, with the key aim being no evidence of Crohn's disease on endoscopy after one year.

4. The patient perspective

a) Colette Beecher

Colette explained how the symptoms of MS hindered her work and parent role, as well her ability to participate in her interests and hobbies. After first being diagnosed in 2011, she received two different disease modifying drugs but these did not prevent relapses.

Colette was able to receive autologous HSCT through a clinical trial in 2016. She initially had apprehensions about the treatment (the chemotherapy as well as HSCT), but was reassured by the fact that the treatment was not completely untried and untested. Her main concerns were about hair loss, nausea and exhaustion.

Colette explained that she is now in good health and puts this down to the consistent monitoring and expertise provided by her medical team, for which she expressed her gratitude. After two months she was active and after four months she was back to work.

The key message that Colette wanted to share was: 'I now have the possibility of living a life without MS, and contemplating a future without disability. This is a future that HSCT has given me'. However, she also

stressed the need for support beyond treatment completion, e.g. for managing ongoing infections or locating rehabilitation services to help the recovery process.

Colette is now conducting research into the needs of patients who have received autologous HSCT for MS.

b) Caroline Wyatt
Caroline also received HSCT to treat MS but had a very different experience to Colette.

Caroline explained that she has suffered with MS since 1992, but was only recently diagnosed in 2015. This means that for 23 years she has been experiencing increasing disability, which has affected her work as a journalist. Her diagnosis was difficult as she did not exhibit the typical signs of MS and it was only when her legs went numb and she was losing the ability to walk that MS was finally identified. It was too late for drugs to be an effective treatment for her.

Caroline first became aware of HSCT as a treatment for MS after watching an episode of Panorama in 2016. Unfortunately, she was not a suitable candidate to access HSCT via a clinical trial in the UK and, therefore, felt that she had no choice but to travel to Mexico to receive treatment. She was very complementary of the care she received there.

She said that, initially, her response to the treatment was good and for the first time in more than two decades she felt free of MS. However, in the past few months some of her symptoms have returned. She is grateful to have an understanding employer, for whom she now works part-time, and generally remains optimistic.

Caroline was keen to stress that there needs to be much more focus on the early diagnosis of autoimmune diseases such as MS. It is life-changing disease that leads to many lives ending too early.

5. Q&A

Mark Tami MP was able to take a few questions from those in attendance. Key points included the need to catch patients in the early stages of their auto-immune disease to give HSCT the best chance of success, and the need to continue raising awareness of the potential of HSCT as a treatment for severe autoimmune diseases.

Mark Tami MP concluded by thanking the speakers and all those in attendance for their time.