The Edinburgh Parkinson's Lecture, Wednesday 22 April 2015

The battle to beat Parkinson's: the end of the beginning

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We were delighted to welcome Professor Patrik Brundin to deliver the fourth annual Edinburgh Parkinson's Lecture. Around 340 people had registered to attend the event at the Royal College of Physicians in Queen Street, while others may have chosen to watch the lecture at home, streamed live for the first time this year. Although the pharmaceutical companies were not with us this year, the audience was, as ever, diverse. Only around a half of the audience was composed of Edinburgh Branch members, including many with Parkinson's or family members with a personal interest the condition: we also welcomed nearly one hundred health professionals, including GPs, consultants, physios, occupational therapists, nurses and speech therapists, and over a hundred people who had travelled from outside the Edinburgh Branch area.

In her speech of welcome, Dr Nicki Colledge of the Royal College of Physicians of Edinburgh included the news that the lack of disabled access to the lecture theatre will be addressed with ramps and internal lifts by 2016. Professor Siddarthan Chandran, Director of the Anne Rowling Regenerative Neurology Clinic, then introduced Professor Brundin, outlining some of his pioneering work on cell repair in Lund, and also praising the Edinburgh branch for attracting such distinguished speakers and an impressively large audience for a warm and sunny April evening.

Since the slides and a video of Professor Brundin's presentation will be available, this report seeks only to provide an outline of the topics he covered. He began by outlining his personal, family experience both of Parkinson's and of the UK and explaining why he had chosen the optimistic Churchillian subtitle for his talk, given recent exciting developments in repairing the brain with cells and genes. He stressed the **need to understand unmet medical needs** of people with Parkinson's: although dopaminergic therapies may treat motor symptoms well for several years, dyskinesia remains an issue; non-motor symptoms often lack effective therapies and no therapies as yet are effective in slowing the progression of Parkinson's. Next, he described a series of research

attempts to **repair the brain**, including the injection of foetal dopamine neurons into the brains of eighteen patients between 1987 and 1999, and the very positive long-term outcomes for some, though not all, of those patients. Subsequent research had moved to the use of embryonic stem cells. More recent work by Dr Shinya Yamanaka had shown how to produce induced pluripotent stem cells (IPS cells), avoiding the ethical issues, and, more recently, how to produce dopamine neurons directly from patients' own skin cells, removing the need to go via the intermediate step of IPS cells. This work is likely to lead to a clinical trial in Japan in the next two years. Professor Brundin also noted the recent work published in the Lancet by Palfi *et al.* (2014) on the long-term safety and tolerability of ProSavin, using gene therapy to stimulate the brain to produce dopamine.

His next topic was the need to use the **right experimental models**, outlining some theories about the causes of Parkinson's, including cellular energy failure; misfolding of alpha-synuclein, leading to the formation of Lewy bodies; and inflammation. Each of these theories would suggest a different approach to treatment: for example, in the case of the third theory, anti-inflammatory drugs. Professor Brundin's discussion of therapies and the reluctance of drug companies to embark on the hugely expensive development of new drugs for the central nervous system included the possibilities for **repurposing drugs**, using known drugs in new ways, to be tested through further clinical trials. Finally, he stressed the need to '**rally to the challenge**' of increasing Parkinson patient participation in clinical trials.

After a lively question and answer session, chaired by Dr Conor Maguire, and closing remarks from Dr Arthur Roach, Director of Research and Development, Parkinson's UK, the evening ended with a vote of thanks from Ken Bowler. The Parkinson's UK Scottish Team collected donations from the audience as they left, which will be used to support further Parkinson's research.