Background

Parkinson’s Disease (PD) is a chronic progressive disorder of the central nervous system. Approximately 1.25 million people (mainly elderly) are affected in Europe and the figure is expected to double within the next twenty years. The diagnosis is mainly based on the following cardinal symptoms: rigidity, tremor, bradykinesia and impaired postural reflexes. Whereas the symptoms can easily be controlled in the first years, PD may lead to a considerable loss of quality of life, to care dependency and disability in this advanced stage. The financial burden for both, the patient (and his family) as well as the society is enormous. Currently, about 12% of the European budget for neurological diseases is spent for PD which is the second most common neurodegenerative disease after Alzheimer’s disease.

Methods

A multi-disciplinary team with patient representatives, clinical experts, health economic experts and industry partners worked together from May 2016 until June 2017 to evaluate diagnosis and treatment gaps of PD in Europe to identify best practices and solutions for better PD care models in Europe to prepare recommendations how to implement proposed solutions. A detailed patient journey matrix has been prepared to identify the current gaps of PD care - starting from prevention, screening/stratification, early intervention, disease management, disability, rehabilitation, until end-stage management and palliative care. The most relevant issues have been identified by the team for further evaluation. Literature and research reports (like MyPD Journey research reports from EPDA2 or what matters most? From Parkinson’s 1UK) have been used to identify best practices in Europe and to prepare recommendations for better PD care (Lit from NL and Israel). A sub-team has investigated the economic and quality of life impact of the identified treatment gaps on the patients and the society (see VoT PD poster economic evaluation).

The Care pathway: Treatment Gaps and Unmet Needs

1. DELAYED OR INADEQUATE DIAGNOSIS
   Although 50% of patients are diagnosed by a PD specialist, there is a high risk of a delayed or inadequate diagnosis. The range of PD symptoms is diverse and most symptoms are common to other diseases.

2. NO ADEQUATE TREATMENT
   Adequate treatment of PD gets more and more difficult with the progression of the disease. Many aspects like age of a patient, change with individual symptoms, existing co-morbidities, potential of side effects of treatment have to be taken into consideration and require the knowledge of PD specialists. Currently, not every patient in Europe has access to PD specialists and new PD therapies (surgical techniques, pump therapies).

3. NON-ADHERENCE TO TREATMENT
   PD patients frequently show poor adherence to prescribed therapies than they actually do. Better treatment adherence is important for patient’s well-being and has a significant cost impact on the healthcare system.

Recommendations

1. Better information and active involvement of patients and caregivers will help to identify the best possible treatment and will result in a better treatment adherence.
2. Improved communication and coordination processes will help to establish integrated and multi-disciplinary care systems. Countries and regions that are leading in this respect might share their knowledge and their experiences.
3. Each patient should have access to the best possible treatment and therapy at each stage of the disease.
4. The public needs to be better informed about the complexity of PD and patient needs. Patients (especially the younger ones) should not need to worry about stigmatisation.
5. More investment in research including basic science, patient-oriented research and development of new treatment solutions is required. Currently, research allocations to brain disorders do not match with the socioeconomic impact of the disease as proposed by the European institutions.

Conclusions

Decision and policy makers are asked to act soon in order to face the financial and societal burden resulting from an increasing number of patients suffering from PD in Europe. A good balance is needed between cost-effectiveness of PD diagnosis & treatment and the well-being of the individual. Due to the high complexity of the disease, better knowledge and well-coordinated care models are needed as already available in some countries in Europe. Support of patients is requested to broadly implement available solutions and known best practices in all European member states.

References:


Acknowledgements:

This work was supported by Grünenthal, Pfizer Inc. and Medtronic. We would like to thank Gudula Petersen (Grünenthal), Charles Full (Pfizer Inc.) and Silke Wallersteiner Aufiero (Medtronic) for the contribution to this work. A digital version of the poster including references and other supporting documents is available here: http://www.braincouncil.eu/activities/projects/the-value-of-treatment/PD
Background

Parkinson's disease (PD) is a chronic progressive neurodegenerative disease affecting approximately 7 million people globally with devastating socioeconomic effects on individuals, their families and society. Total European costs of PD in 2010 alone amounted for €13.9 billion [1]. The global prevalence of PD is increasing over time and it is expected to double within the next 20 years (up to 2% in people over the age of 60 and 4% in people over 80 years) [2].

Methods

Lack of early/timely treatment. The first economic analysis looked at the short term cost-effectiveness gains attained to treatment start at different stages in the patient journey (graded according to Hoehn and Yahr stages (HY)) compared with no treatment. With a decision analytic modeling approach, we evaluated the impact of a hypothetical treatment (with fixed gain in effectiveness compared with no treatment as per published data of early PD intervention [3,4]) when given to patients of different health states (Hoehn and Yahr stages, HY). Annual cost estimates were reported for the societal perspective [5] inferring to 2017 figures, Euros. Effectiveness was expressed in terms of Quality Adjusted Life-Years (QALYs) gains. Cost-effectiveness was reported in terms of incremental cost-effectiveness ratio (ICER). Published economic and QALY data for different HY stages [6] were used to create a matrix that enabled to attach annual societal costs (5) to different QALY values (health states; see figure 1). Sensitivity analyses were applied to test the robustness of the model according to variation in the QALY improvements (0.05-0.10-0.15 QALY) and intervention costs (zero up to 6 Euro daily). Two separate EU healthcare systems were considered including Germany and UK.

Lack of adequate treatment for advanced PD. A second set of analyses examined the cost effectiveness of best treatment in advanced PD (deep brain stimulation (DBS) and best medical treatment (BMT) compared with current care). The analysis looked at direct costs (2017 figures, Euros) and QALYs comparing a current scenario where only a small proportion of eligible patients receive best treatment (2% on DBS+BMT vs 88% on BMT) vs no treatment. A target scenario where a larger group of patients receive best treatment (15% on DBS+BMT vs 85% on BMT only) was published (see figure 2). Published economic evidence representing clinical progression and capturing treatment effect (QALY) and costs using Markov modeling techniques were used to provide long term (5 years) cost and QALY evidence for two different healthcare settings (Germany [7] and UK [8]).

Results

Lack of early/timely treatment. A third set of analyses looked at the economic impact of adherence to treatment (e.g. looking at the change in average patient healthcare costs according to level of adherence), and of a shift towards increased adherence to treatment in the PD patient community. With a decision analytic model (figure 4) we calculated the economic savings (2017 figures, Euros) when moving from status quo (current care) to a target scenario with improved adherence rates. Outcomes for the economic evaluation were healthcare costs (drug costs, A&E, hospitalizations, GP visits, day care and home stay). A timeframe of 1.5 years was considered. Sensitivity analyses looked at groups of patients according to different clinical definition of adherence (Duration of therapy (DOT) - it assessment the duration of time, or persistence that a patient is treated with APDs. DOT was measured as the number of days between the first and last APD medication prescribed of all APDs and the days' supply of the last APD at death, or the end of 19 months or whichever came first. Medication possession ratio (MPR) - it assessed how regularly patients take APDs within their possession. Calculated as the total days' supply from all APD class (monitored) divided by the aggregate DOT of all drug classes (denominator).)

Lack of adequate treatment for advanced PD. A second set of analyses evaluated the cost effectiveness of best treatment in advanced PD (deep brain stimulation (DBS) and best medical treatment (BMT) compared with current care). The analysis looked at direct costs (2017 figures, Euros) and QALYs comparing a current scenario where only a small proportion of eligible patients receive best treatment (2% on DBS+BMT vs 88% on BMT) vs no treatment. A target scenario where a larger group of patients receive best treatment (15% on DBS+BMT vs 85% on BMT only) was published (see figure 2). Published economic evidence representing clinical progression and capturing treatment effect (QALY) and costs using Markov modeling techniques were used to provide long term (5 years) cost and QALY evidence for two different healthcare settings (Germany [7] and UK [8]).

Conclusions

The economic analysis confirmed that timely, adequate and adherent approach to Parkinson's disease treatment are paramount to: reducing the risk of disease progression; limiting the effects of PD on quality of life; and tackling the economic impact on service providers across healthcare systems.

References: