Discovery and validation of novel endpoints in dry age-related macular degeneration and diabetic retinopathy

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Project background

- Retinal diseases are among the leading causes of blindness worldwide
- While substantial progress has been made in the treatment of neovascular age-related macular degeneration (neovascular AMD) and diabetic macular edema (DME), for other common retinal conditions such as the dry form of AMD (dry AMD) or diabetic retinopathy (DR) beyond DME, treatment options remain limited
- One major development hurdle is the lack of suitable endpoints for investigating these conditions in early exploratory and pivotal trials

Need for public-private collaboration

Initiation of innovative medicines will require collaboration and combination of expertise from stakeholders across public and private sectors, for a number of reasons:

- Pharmaceutical companies have knowledge about drug discovery, drug development as well as regulatory and Health Technology Assessment (HTA) requirements
- Academia has expertise in methods to assess visual function and structural (bio-) markers that may correlate with visual impairment. They have access to databases that would allow search for potential correlations
- Hospitals and practising physicians have access to dry AMD and DR patients. They have a good understanding of the epidemiology, pathophysiology or other evidence to predict clinical benefit
- Patients, users and caregivers can also play an important role in establishing the meaningfulness of new endpoints

Objectives of the full project

- The aim of the project is to evaluate novel endpoint candidates for retinal diseases, mainly dry AMD and DR
- The evaluation should cover the technical, medical and health-economical appropriateness of methods, and bridge preclinical and clinical studies
- The following methods are in scope:
  - Visual function testing beyond best corrected visual acuity (BCVA)
  - Electrophysiology
  - Imaging methods to assess retinal structures
  - Patient reported outcome tools and QoL-related endpoints
  - Combinations of these methods

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Expected impact on the R&D process

It is expected and aspired that the project will contribute to

- making preclinical and clinical research more target-oriented and patient-oriented
- effectively pre-selecting promising drug candidates
- early discarding of ineffective treatment approaches
- avoiding development detours
- significant acceleration of the development process
- facilitating patient-relevant development

Suggested architecture of the project

- An industry consortium comprising primarily pharmaceutical companies and, depending on the proposals brought forward by the applicant consortium, medical device companies
- An applicant consortium composed of applicants with a proven track record of
  - Strong clinical expertise in ophthalmology
  - Strong clinical research experience
  - Access to patients and databases
  - Public health expertise
  - Health economic expertise
  - Understanding of pre-clinical models in ophthalmology

Suggested architecture of the project

- The implementation of an advisory panel to the Consortium comprising payers, regulatory agencies and other relevant expert advisors is intended for this project
- The Consortium is expected to suggest an architecture for the full proposal addressing all objectives and key deliverables
- A plan for interactions with Regulatory Agencies/Health Technology Assessment bodies including relevant milestones and appropriate resource allocation should be built into the project architecture

Expected contributions of the applicants

- The contribution from the applicant consortium should be the setting-up and running of studies that are required to meet the call's objectives
- These activities will be supported by in-kind and financial contributions from the companies

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Expected (in kind) contributions of EFPIA members

Besides financial contributions, EFPIA members may choose to make contribution by

- provision of expert manpower
- research facilities
- provision of imaging and other technical equipment as needed
- other

What's in it for Applicants?

- Academic researchers may have benefit from the collaboration in terms of
  - gaining an overview over their research field and beyond
  - building interesting research networks
  - finding funds for investigational studies
  - becoming co-authors in important publications and high-ranked journals
- Small and medium enterprises may appreciate the opportunities to
  - receive valuable input for their research from clinically experienced entities
  - liaise with key players in pharmaceutical industry
  - find opportunities for collaborations and joint ventures
- Patients´ organizations may appreciate the direct contact with researchers and developers to
  - make sure that patient-related aspects are reflected in development programs

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Key deliverables of the full project

- The key deliverable will be the generation of robust data from retrospective and/or prospective studies serving as basis for the discussion of regulatory acceptability of endpoints for future clinical programs.
- Interactions with and advice from regulatory authorities will be sought early-on during set-up of the studies.

Key deliverables of the full project

It is expected that the proposed research program delivers data on:

- Technical evaluation of methods for validity, repeatability, reliability, interpretability, and translatability from preclinical to clinical development phases. Assessment for acceptability by patients suffering from the disease will be included.
- Development of novel methods and tools, e.g. disease-specific patient reported outcome tools or novel visual function testing protocols.
- Clinical validation of methods/tools in patient studies for dry AMD and DR. Preferentially, the studies should evaluate several candidate methods head-to-head.
- The collection of biomarkers (e.g. genomic or soluble) during the study permitting the selection of high risk populations.
- Wherever there are synergies between dry AMD and DR these should be leveraged, e.g. by combining both conditions within one study. However, it is also important to clearly address how condition-specific aspects should be investigated.

Thank you

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