Imaging activities within IMIDIA: a case report from IMI1

Jacob Hecksher-Sørensen
Novo Nordisk A/S
Team Leader for Imaging Team in Novo Nordisk
- Ex vivo imaging of fluorescent peptides in diabetes and obesity
- Not PET or MRI

Work Package Leader in WP4 since June 2012
- Not involved in discussing the IMIDIA call

Involved in the Novo Nordisk part of SGG discussions for IMI2

This talk will represent my own personal views based on the above experiences. These may differ from:
- Company – Company
- Other work packages
- Other IMI programs
Diabetes

2 months of insulin treatment

Beta cell loss/failure

↓

Loss of insulin

↓

Insulin replacement therapy

This has been the approach for ~90 years
IMIDIA Vision

IMIDIA Objectives:
To monitor specific disease progression and enable improved disease management.

To pave the way for the development of β-cell focused therapies via:
- Better biomarkers to monitor therapy benefit in patients
- Better disease centric in-vitro and in-vivo models
- Better understanding of β-cell biology to enable focused therapeutic approaches
FINANCING:

IMI funding: € 8,060,760
Academia / Biotech contr. € 2,445,506
Pharma Resources (EU+USA) € 17,701,800

TOTAL PROJECT COST: € 28,208,066

STARTING DATE: 1.2.2010
DURATION: 68 months
WP4 Goal:
Non-invasive imaging for in vivo diagnosing beta-cell mass and function in diabetes and following drug treatment
The beta cell is the key
Combining tracers with imaging modalities

Ex vivo staining (beta cells)

Beta cell lines (rodent/human)

In vivo rodent models

Large Animal models

Human

Number of promising agents

WP4 Milestones (Imaging agents)

M1

M2

M3

M4

M5

M6

WP4 Milestones

Imaging modality

Immuno-fluorescence

Bio-luminescence

3D Optical imaging (fluorescence)

MRI imaging

PET/CT imaging

Ex vivo

In vivo
What is the experience from WP4

Very well organised…

No STOP/GO decisions (secondary values)
When planning we extrapolate present knowledge into the future!
Creating value for the individuals working in the IMIDIA workspace!
If it is possible to measure BCM in man, what will it be used for?

Very expensive and labor intensive compared to BG or HbA1c
Due to variation between individuals it doesn't make sense to have one time point
Where we believe it can add value is in longitudinal studies

Imaging beta cells will be a tool for developing new drugs
Implementation of biomarkers to stratify patient populations

Other funding
Internal stakeholders

Academic Partners

Tool invention
Impact

Customers
Company value chain

Biotech Partners

Tool development
Business

Management
Company value chain

Industry Partners

Tool implementation
Robustness

IMIDIA Confidential
Plan for flexibility

Partner 1: Biomarker X
Partner 2: Biomarker Y
Partner 3: Biomarker Z
Thank you for your attention