Case study: The importance of multi-stakeholder collaboration

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2° MULTI-STAKE-HOLDER SYMPOSIUM ON IMPROVING PATIENT ACCESS TO RARE DISEASE THERAPIES
Brussels, 22-23 February 2017

Lucia Monaco, Chief Scientific Officer, Fondazione Telethon, Italy
May 2016 the first ex-vivo gene therapy treatment approved in the world

ADA-SCID

• Life-threatening disease
• Often fatal within the child’s first years of life
• Incidence: 2-7 per million live births

How did we get there?

Strimvelis®
(autologous CD34+ cells transduced to express ADA)
for the treatment of patients with ADA-SCID for whom no suitable HLA-matched related stem cell donor is available

• Severe immunodeficiency caused by mutated ADA gene
• The ADA enzyme protects developing lymphocytes from death
1995: SR-TIGET is founded

**Fondazione Telethon**
Italian charity

**MISSION**: to bring the results of excellent research to patients affected by rare genetic diseases

**Ospedale San Raffaele**
Major Italian research hospital, Milan

**San Raffaele-Telethon Institute for Gene Therapy**
- Excellent research
- Innovative gene therapy approaches
- Research AND clinical setting
2000-2009: ex vivo gene therapy clinical trials for ADA-SCID

- 2000: first patient treated
- 2002-2009: Pivotal phase I/II clinical trial (12 patients)

- 2000: GMP vector production at CMO MolMed
- 2005: EMA ODD
- 2007: Protocol Assistance from EMA
- 2009: FDA ODD

Adapted from: Science 2013
doi: 10.1126/science.1242551
ADA-SCID gene therapy is safe and effective

- GT is effective as single therapy long-term
- Decreased rate of severe infections
- Improved T cell counts
- No cases of genotoxicity
How to treat the next patients?

2009
- 14 ADA-SCID patients treated
- Patient enrolment closed
- 8.3M€ total investment by Fondazione Telethon

Next patients?
The reasons for an alliance

- One gene therapy clinical trial (ADA-SCID) successfully completed
  - Need to **develop production** of medicinal product suitable for **market registration**
- Six more gene therapy studies at advanced preclinical level (lentiviral platform)
  - Need to **finalize preclinical studies and complete clinical trials** before applying for market registration

- Financial resources
- **Competences and facilities for medicinal product development and production**
- **Marketing authorization**
- **Distribution and post-marketing surveillance**

**Alliance agreement**

October 2010
The power of collaboration

1995
SR-TIGET is founded

2000
1st ADA-SCID patient treated
GMP production at CMO MolMed

2002-2009
Phase I/II trial

2005
EMA ODD

2007
Protocol Assistance from EMA

2009
FDA ODD

2010
Alliance with GSK

2010-2016
Clinical treatment under compassionate use
GLP-certified laboratories at SR-TIGET

2015
MAA filing at EMA

2016
MAA by EMA

2016
MAA filing at EMA

2010
Phase I/II trial

PARTNERSHIPS

for the treatment of patients with ADA-SCID for whom no suitable HLA-matched related stem cell donor is available

CLINICAL TRIALS
supported by GXPs

REGULATORY
ACTIVITIES

ADA-SCID

2005
EMA ODD

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