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## INTRODUCTION:

- According to EMA (European Medicines Agency) definition<sup>1</sup>, Advanced therapy medicinal products (ATMPs) are medicines for human use that are based on genes, tissues or cells. They offer groundbreaking new opportunities for the treatment of disease and injury.
- All advanced therapy medicines are authorized centrally via the EMA.
- However, due to their specificities in terms of manufacturing and patient administration, the market access for ATMPs across European countries is complex and varies hugely depending on the country.

## OBJECTIVE:

- The aim of this poster is to compare the market access for ATMPs approved by the EMA since 2015 across the EU5 countries focusing on reimbursement trends.

## METHODS:

- 11 innovative ATMPs were identified with an EMA market authorization (including Zalmoxis<sup>®</sup> which was withdrawn in 2019). Since the similar analysis we done in March 2019, only one ATMP has been approved: Zolgensma<sup>®</sup>.
- A targeted research on official EU5 reimbursement / HTA agencies websites were executed in June 2020 in order to describe the current market access situation for each ATMP.

## RESULTS:

- The reimbursement and pricing vary between countries: the table below describes the market access situation of each ATMP in the EU-5.

Brand name	Active substance	Indication	CHMP	France <sup>2</sup>	Germany <sup>5</sup>	Italy <sup>5</sup>	Spain <sup>3,4</sup>	UK/England <sup>7</sup>
Holoclar <sup>®</sup>	ex vivo expanded autologous human corneal epithelial cells containing stem cells	Deficiency caused by chemical ocular burns	19/12/2014	positive reimbursement decision / funding by hospitals	handled as procedure, reimbursed through DRG and not AMNOG assessed	reimbursed; payment by results	commercialized, but not reimbursed by the NHS. Negative reimbursement decision	reimbursed via NICE's Single Technology Appraisal pathway with some restrictions using Patient Access Scheme (Simple Discount)
Imlygic <sup>®</sup>	talimogene laherparepvec	unresectable malignant melanoma	23/10/2015	no evaluation by HAS	AMNOG assessed: no added benefit, reimbursed	not commercialized	authorized, not commercialized. Negative reimbursement decision	reimbursed via NICE's Single Technology Appraisal pathway using Patient Access Scheme (Simple Discount)
Strimvelis <sup>®</sup>	autologous CD34+ enriched cell fraction that contains CD34+ cells transduced with retroviral vector that encodes for the human ADA cDNA sequence	Combined immunodeficiency due to adenosine deaminase deficiency (ADA-SCID)	01/04/2016	no evaluation by HAS	At the time of data collection – no AMNOG assessment started	reimbursed; payment by results	not authorized, not commercialized	gained full recommendation within its marketing authorisation via NICE's Highly Specialised Technology process
Zalmoxis <sup>®</sup>	allogeneic T cells genetically modified with a retroviral vector encoding for a truncated form of the human low affinity nerve growth factor receptor (ΔLNGFR) and the herpes simplex I virus thymidine kinase (HSV-TK Mut2)	add-on treatment in adults who have received an haploidentical transplant	24/06/2016	negative reimbursement decision	AMNOG assessed: non-quantifiable added benefit, reimbursed	reimbursed; flat price per patient (withdrawn)	Withdrawn. Negative reimbursement decision	NICE has not yet reviewed
Spherox <sup>®</sup>	spheroids of human autologous matrix-associated chondrocytes	articular cartilage defects	19/05/2017	negative reimbursement decision	At the time of data collection – no AMNOG assessment started	P&R procedure not yet completed	not authorized, not commercialized	Single Technology Appraisal pathway with some restrictions
Alofisel <sup>®</sup>	darvadstrocel	complex anal fistulas in adults with Crohn's disease	15/12/2017	Reimbursed	AMNOG assessed: non-quantifiable added benefit, reimbursed	not reimbursed (class C)	reimbursed; payment by results. Restrictions in the patient population. Included in Valtermed	not recommended
Kymriah <sup>®</sup>	tisagenlecleucel	B-cell acute lymphoblastic leukaemia (ALL) and diffuse large B-cell lymphoma (DLBCL)	29/06/2018	Reimbursed, MEA	AMNOG assessed: non-quantifiable added benefit, decision restricted by time and AMNOG reassessed: Hint of a non-quantifiable added benefit, reimbursed pay-for-performance Agreement	reimbursed; payment at results (ALL); obligatory discount (DLBCL)	reimbursed; payment by results. Included in Valtermed	reimbursed via Cancer Drugs Fund
Yescarta <sup>®</sup>	Axicabtagene ciloleucel	diffuse large B-cell lymphoma (DLBCL); primary/Mediastinal large B-cell lymphoma (PMBCL)	29/06/2018	reimbursed; MEA	AMNOG assessed: non-quantifiable added benefit, reimbursed	reimbursed; payment at results, obligatory discount	reimbursed; payment by results. Included in Valtermed	reimbursed via Cancer Drugs Fund
Luxturna <sup>®</sup>	Voretigene neparvovec	loss of vision due to inherited retinal dystrophy	21/09/2018	Positive reimbursement decision / price in negotiation / available through post ATU program	AMNOG assessed: hint for a considerable added benefit, reimbursed	Pending decision	authorized, not commercialized. Currently being evaluated	reimbursed via NICE's Highly Specialised Technology Appraisal pathway using Patient Access Scheme (Simple Discount)
Zynteglo <sup>®</sup>	autologous CD34+ cells encoding beta-T87Q-globin gene	Transfusion dependent beta-thalassaemia	28/03/2019	Positive reimbursement decision	AMNOG assessed: hint of a non-quantifiable added benefit, reimbursed	P&R procedure not yet completed	not authorized, not commercialized	currently being appraised by NICE
Zolgensma <sup>®</sup>	Onasemnogene Apeparvovec	for the treatment of patients with 5q spinal muscular atrophy (SMA) with a bi-allelic mutation in the SMN1 gene and a clinical diagnosis of SMA Type 1, or patients with 5q SMA with a bi-allelic mutation in the SMN1 gene and up to 3 copies of the SMN2 gene.	18/05/2020	Ongoing evaluation for reimbursement	The AMNOG assessment started in July 2020. Result expected in mid of December 2020.	P&R procedure not yet completed	authorized, not commercialized. Currently being evaluated	currently being appraised by NICE. Will go through the Highly Specialised Technologies evaluation

## RESULTS:

### France



- 8/11 ATMPs were assessed for reimbursement by the transparency committee: Six had a positive reimbursement decision (Holoclar<sup>®</sup>, Alofisel<sup>®</sup>, Kymriah<sup>®</sup>, Yescarta<sup>®</sup>, Luxturna<sup>®</sup>, Zynteglo<sup>®</sup>). Two had a negative reimbursement decision (Zalmoxis<sup>®</sup>, Spherox<sup>®</sup>)
- Compared to 2019 analysis, two more were assessed: Zynteglo<sup>®</sup> was recognized as innovative (moderate (III) added medical benefit) and Spherox<sup>®</sup> had a negative reimbursement decision.
- Three have a public price (Yescarta<sup>®</sup>, Kymriah<sup>®</sup>, Alofisel<sup>®</sup>).
- Luxturna<sup>®</sup> and Zynteglo<sup>®</sup> are available through the post-ATU process; Holoclar can be funded by hospitals. The assessment of Zolgensma<sup>®</sup> is ongoing.

### Germany



- 7/11 therapies were assessed within the AMNOG process (Imlygic<sup>®</sup>, Zalmoxis<sup>®</sup>, Alofisel<sup>®</sup>, Kymriah<sup>®</sup>, Yescarta<sup>®</sup>, Luxturna<sup>®</sup>, Zynteglo<sup>®</sup>) and 1/11 (Zolgensma<sup>®</sup>) is expected by the end of 2020.
- Kymriah<sup>®</sup> was reassessed with no change of the added benefit.
- Compared to 2019 analysis, two more therapies were assessed by G-BA (Zynteglo<sup>®</sup> which obtain a non quantifiable added benefit and Luxturna<sup>®</sup> which obtain a hint for a considerable added benefit)
- Holoclar<sup>®</sup> was taken as a procedure and it can be reimbursed through the DRG-System.
- Kymriah<sup>®</sup> was the 1<sup>st</sup> ever therapy on which a pay-for-performance deal was agreed.
- Zolgensma<sup>®</sup>, has to follow the new rule of the "Anwendungsbegleitende Datenerhebung" introduced at the end of 2019. The required Routine Practice Data Collection according §35a Par. 3b SGB V binds the manufacturer to set up a patient registry and to submit results yearly within a new AMNOG-Dossier to the G-BA

### Italy



- 5/11 drugs received a positive decision on reimbursement from AIFA (Strimvelis<sup>®</sup>, Holoclar<sup>®</sup>, Zalmoxis<sup>®</sup>, Kymriah<sup>®</sup>, Yescarta<sup>®</sup>). Zalmoxis<sup>®</sup> was withdrawn in 2019 and is no longer available on the Italian market. Both, Kymriah<sup>®</sup> and Yescarta<sup>®</sup> were recognised as innovative drugs, hence they have had immediate access to regional formularies and are covered by the Innovative Drug Fund. Innovation status of Strimvelis<sup>®</sup> expired last year.
- 1/11 drug (Alofisel<sup>®</sup>) received a negative reimbursement decision (i.e. allocated in class C) but was nevertheless launched several months after it, in April 2019. 1/11 drug (Imlygic<sup>®</sup>) has not started a P&R process and is not available in Italy.
- 3/11 drugs (Spherox<sup>®</sup>, Zynteglo<sup>®</sup>, Zolgensma<sup>®</sup>) are currently under evaluation by the AIFA's Technical and Scientific Commission. Worthy to note that the P&R process for Spherox<sup>®</sup> has only started this year, although it was approved by the EMA in July 2017. 1/11 drug (Luxturna<sup>®</sup>) has completed the negotiation process with the AIFA's Pricing and Reimbursement Committee but the outcome is pending.

### Spain

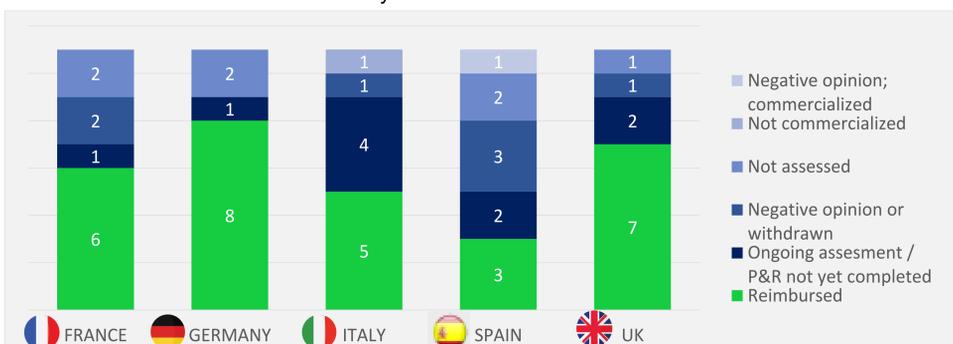


- 3/11 drugs (vs 2/10 in 2019) are reimbursed (Kymriah<sup>®</sup>, Yescarta<sup>®</sup> and Alofisel<sup>®</sup>); all of them included in Valtermed with a payment by results agreement). The therapeutic positioning report (IPT) of Alofisel<sup>®</sup> included restrictions in the patient population.
- Strimvelis<sup>®</sup>, Spherox<sup>®</sup> and Zynteglo<sup>®</sup> have not requested a national code. Therefore, they have not been evaluated in Spain.
- Holoclar<sup>®</sup>, Imlygic<sup>®</sup> and Zalmoxis<sup>®</sup> have a negative reimbursement decision. In spite of not being reimbursed, Holoclar<sup>®</sup> is commercialized.
- Luxturna<sup>®</sup> and Zolgensma<sup>®</sup> are currently under evaluation. National codes for Luxturna<sup>®</sup> and Zolgensma<sup>®</sup> were issued, respectively, in April 2019 and in July 2020.

### United Kingdom



- 7/11 drugs (vs 5/10 in 2019) are reimbursed to date: only one of these, Strimvelis<sup>®</sup>, was reimbursed at its full list price.
- Spherox<sup>®</sup> was reimbursed via NICE's STA with some restrictions.
- The two CAR-Ts were reimbursed via NHS England's Cancer Drugs Fund.
- Holoclar<sup>®</sup>, Imlygic<sup>®</sup> and Luxturna<sup>®</sup> were recommended using a simple discount Patient Access Scheme.
- Zynteglo<sup>®</sup> and Zolgensma<sup>®</sup> are currently being appraised by NICE.
- Alofisel<sup>®</sup> was not recommended by NICE.



## CONCLUSIONS:

- Most ATMPs are granted patient access in EU5 even though HTA bodies have imposed monitoring requirements to ensure the value reflects the price.
- Access to ATMPs varies across countries. Germany and the UK are the countries with the highest number of reimbursed ATMPs whereas Spain is the country with the lowest number.
- At this time, Kymriah<sup>®</sup> and Yescarta<sup>®</sup> are the only ATMPs reimbursed in the all EU-5 countries

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