mesoblast

the regenerative medicine company

Global Leader in Allogeneic Cellular Medicines for Inflammatory Diseases

FY Ended June 30, 2019

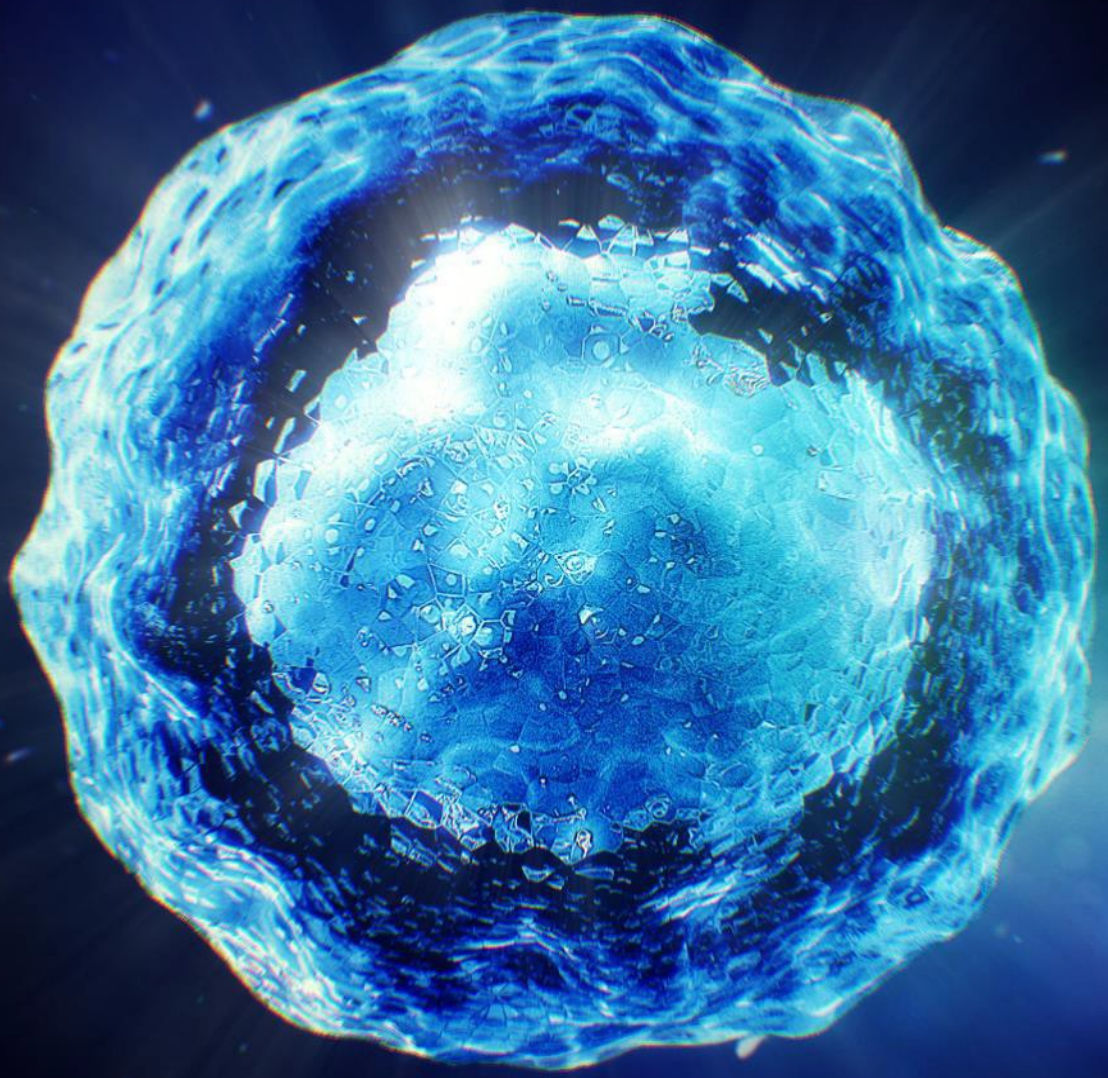
Nasdaq: MESO ASX: MSB

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This presentation includes forward-looking statements that relate to future events or our future financial performance and involve known and unknown risks, uncertainties and other factors that may cause our actual results, levels of activity, performance or achievements to differ materially from any future results, levels of activity, performance or achievements expressed or implied by these forward-looking statements. We make such forward-looking statements pursuant to the safe harbor provisions of the Private Securities Litigation Reform Act of 1995 and other federal securities laws. All statements other than statements of historical facts contained in this presentation are forward-looking statements. Words such as, but not limited to, "believe," "expect," "anticipate," "estimate," "intend," "plan," "targets," "likely," "will," "would," "could," and similar expressions or phrases identify forward-looking statements. We have based these forward-looking statements largely on our current expectations and future events , recent changes in regulatory laws, and financial trends that we believe may affect our financial condition, results of operation, business strategy and financial needs. These statements may relate to, but are not limited to: expectations regarding the safety or efficacy of, or potential applications for, Mesoblast's adult stem cell technologies; expectations regarding the strength of Mesoblast's intellectual property, the timeline for Mesoblast's regulatory approval process, and the scalability and efficiency of manufacturing processes; expectations about Mesoblast's ability to grow its business and statements regarding its relationships with current and potential future business partners and future benefits of those relationships; statements concerning Mesoblast's share price or potential market capitalization; and statements concerning Mesoblast's capital requirements and ability to raise future capital, among others. Forward-looking statements should not be read as a guarantee of future performance or results, and actual results may differ from the results anticipated in these forward-looking statements, and the differences may be material and adverse. You should read this presentation together with our financial statements and the notes related thereto, as well as the risk factors, in our most recently filed reports with the SEC or on our website. Uncertainties and risks that may cause Mesoblast's actual results, performance or achievements to be materially different from those which may be expressed or implied by such statements, include, without limitation: risks inherent in the development and commercialization of potential products; uncertainty of clinical trial results or regulatory approvals or clearances; government regulation; the need for future capital; dependence upon collaborators; and protection of our intellectual property rights, among others. Accordingly, you should not place undue reliance on these forward-looking statements. We do not undertake any obligations to publicly update or revise any forward-looking statements, whether as a result of new information, future developments or otherwise.

Our Mission

Mesoblast is committed to bringing to market innovative cellular medicines to treat serious and life-threatening illnesses



Corporate History

Over a decade of scientific, manufacturing, clinical development and corporate development experience targeted at bringing to market allogeneic, off-the-shelf cellular medicines for inflammatory diseases

2004:
Mesoblast founded in Melbourne, Australia and listed on the ASX

2010:
Entered into strategic alliance with Cephalon to develop and commercialize MPC therapeutics

2011:
Entered into manufacturing partnership with Lonza Group in Singapore for MPC medicines

2013:
Acquired MSC business from Osiris Therapeutics with trailing earn-out and milestone payments

2014:
Granted manufacturing pioneer status by Economic Development Board of Singapore

2015:
Dual listed on the Nasdaq

2016:
TEMCELL® HS Inj (MSC medicine) launched in Japan by Mesoblast licensee JCR

2017:
Entered licensing agreement with Takeda for the treatment of certain fistulae; in 2018 Alofisel® received approval in EU

2018:
Entered into partnership agreement with Tasly for cardiovascular assets in China

2019:
Smith & Nephew acquired Osiris Therapeutics, became Mesoblast's licensor for the MSC business

2019:
Initiated first BLA submission to US FDA: remestemcel-L (MSC) for steroid refractory acute graft versus host disease (aGVHD)

Premier Global Cellular Medicines Company

Innovative Technology Platform[1]	Late Stage Pipeline	Commercialization Plan
▪ Innovative technology targets some of the most severe disease states refractory to conventional therapies ▪ Well characterized multimodal mechanisms of action ▪ Underpinned by extensive, global IP estate	▪ Initiated filing with US FDA for approval for steroid-refractory aGVHD ▪ Two Phase 3 product candidates – heart failure and back pain – with near term US trial readouts ▪ Heart failure Phase 3 product candidate partnered in China	▪ Building US sales force for aGVHD launch, if approved ▪ Industrial-scale manufacturing to meet commercial demand ▪ First approved products commercialized by licensees in Japan[2] and Europe[3] ▪ Continued growth in royalty revenues from strategic partnerships

1. Mesenchymal precursor cells (MPCs) and their culture-expanded progeny mesenchymal stem cells (MSCs).
2. Licensee JCR Pharmaceuticals Co., Ltd. received the first full PMDA approval for an allogeneic cellular medicine in Japan and markets this product under its trademark, TEMCELL® Hs Inj.
3. Licensee Takeda received first central marketing authorization approval from the European Commission for an allogeneic stem cell therapy and markets this product under its trademark Alofisel®.

Commercial and Late-Stage Product Pipeline

MARKETED

PLATFORM	PRODUCT	THERAPEUTIC AREA		APPROVAL	COMMERCIAL RIGHTS
MSC (Bone Marrow)	TEMCELL® HS Inj[1]	Acute Graft Versus Host Disease	1st allogeneic regen med approved in Japan	✓	JCR Japan
MSC (Adipose)	Alofisel®[2]	Perianal Fistula	1st allogeneic regen med approved in Europe	✓	Takeda Global

IN DEVELOPMENT

PLATFORM	PRODUCT CANDIDATE	THERAPEUTIC AREA	PRE-CLINICAL / PHASE 2 / PHASE 3		COMMERCIAL RIGHTS
MSC suite	Remestemcel-L	Acute Graft Versus Host Disease	———	BLA submission to FDA underway	mesoblast
	Remestemcel-L	Crohn's Disease	———		
	Remestemcel-L	Osteoarthritis/Cartilage Repair	———		
MPC suite	Revascor	Advanced HF (Class II/III) End-Stage HF (Class III/IV)[3]	———		TASLY China[4]
	MPC-06-ID	Chronic Low Back Pain	———		mesoblast
	MPC-300-IV	Rheumatoid Arthritis Diabetic Nephropathy	———		

1 Mesoblast receives royalty income from its licensee JCR Pharmaceuticals Co Ltd on sales of JCR's TEMCELL® Hs. Inj. product in Japan.
2 Mesoblast receives royalty income from its licensee Takeda Pharmaceuticals on Takeda's worldwide sales of its product Alofisel® in the local treatment of perianal fistulae.
3 Study funded by the United States National Institutes of Health (NIH) and the Canadian Health Research Institute; conducted by the NIH-funded Cardiothoracic Surgical Trials Network.
4 Tasly's rights are limited to China; Tasly also has rights to develop MPC-25-IC for Acute Cardiac Ischemia.

This chart is figurative and does not purport to show individual trial progress within a clinical program.

Partnerships and License Agreements

- JCR has rights to use our MSC technology to treat acute GVHD in Japan
- Its product TEMCELL® HS Inj. was the first fully approved allogeneic cellular medicine in Japan
- Royalties and milestones received in last 12 months exceed US$6.0 million
- License expanded in Oct 2018 to cover use in treatment of epidermolysis bullosa (EB), a highly debilitating and sometimes lethal skin disease; currently on file for approval in Japan
- License further expanded in June 2019 to cover use in hypoxic ischemic encephalopathy (HIE) in newborns; clinical trial initiated in July 2019

- Patent license agreement entered in Dec 2017 with Takeda (formerly TiGenix NV) providing exclusive access to certain IP for local treatment of perianal fistulae
- Mesoblast received €10 million in payments and is eligible to receive up to an additional €10 million in milestone payments (€20 million in total payments) plus royalties upon commercial sales of Alofisel® worldwide

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- Exclusive cardiovascular rights in China
- Mesoblast received US$40 million on closing, and is eligible to receive additional milestones and royalties

Recent Corporate Highlights

Remestemcel-L for Steroid-Refractory Acute Graft Versus Host Disease

- Continued growth in revenues from royalties on sales of TEMCELL in Japan for steroid refractory aGVHD.
- Product adoption and reimbursement seen in the Japan GVHD market for TEMCELL informs Mesoblast commercial strategy for rememstemcel-L in aGVHD.
- US addressable market for SR aGVHD in children and adults is expected to be approximately 8-fold larger than Japan, a major commercial opportunity.
- Rolling BLA submission to the US FDA is underway and we expect to complete the filing in CY2019.
- In line with expected timelines for potential US launch of remestemcel-L, spending has increased on commercial manufacturing activities and commercial team ramp up in parallel with the FDA filing.
- Mesoblast intends to expand its clinical program into the adult aGVHD segment.
- An investigator-initiated study evaluating remestemcel-L in children is planned in the US for *chronic* GVHD.
- Mesoblast has the right to use all safety and efficacy data generated by JCR in Japan for TEMCELL to support its life cycle strategy for remestemcel-L in the US and other major healthcare markets such as wound healing in patients with EB and HIE in newborns.

Recent Corporate Highlights (continued)

Revascor for Advanced Heart Failure

- Phase 3 trial in advanced heart failure has completed patient enrollment, with 566 patients randomized to receive Revascor or placebo across 55 centers in North America. The trial's primary endpoint is reduction in heart failure-related hospital admissions, and the key secondary endpoint is reduction in terminal cardiac events.
- Revascor was successful in April 2017 in a pre-specified futility analysis of the Phase 3 trial's primary efficacy endpoint in the first 270 patients enrolled in the trial.
- ~ 90% of events in this Phase 3 trial have been accrued and validated. The trial will complete when sufficient primary endpoint events have accrued, likely by end of CY 2019.

Revascor for End-Stage Heart Failure

- FDA meeting outcomes were:
  - FDA reiterated that a reduction in major gastrointestinal bleeding events and/or epistaxis, collectively termed major mucosal bleeding events, is an important clinical outcome in patients implanted with an LVAD.
  - FDA confirmed that data from the recently completed 159-patient placebo-controlled trial can support product marketing authorization through a BLA with confirmatory clinical trial data.
  - FDA agreed on a confirmatory Phase 3 trial with a primary endpoint of reduction in major mucosal bleeding events, and key secondary endpoints demonstrating improvement in various parameters of cardiovascular function.
- Revascor is being developed for these patients under existing FDA Regenerative Medicine Advanced Therapy (RMAT) and Orphan Drug designations.
- Confirmatory Phase 3 trial planned to be conducted with InCHOIR[1] under existing MoU.

1. InCHOIR = International Center for Health Outcomes and Innovation Research (inCHOIR) at the Icahn School of Medicine at Mount Sinai.

Recent Corporate Highlights (continued)

MPC-06-ID for Chronic Low Back Pain

- Phase 3 trial in chronic low back pain completed enrollment in March 2018 with 404 patients randomized to receive MPC-06-ID or placebo. All patients have now completed at least 12 months of safety and efficacy follow-up.
- Follow-up continuing to a 24-month assessment of safety and efficacy by the first quarter of CY 2020, with readouts planned mid-CY2020

Board and Senior Executive Appointments in Line with Commercialization Plans

- The Board appointed Joseph R. Swedish as Chairman in April 2019. As the former CEO of Anthem Inc., the second largest health insurance company in the US, he brings deep healthcare expertise and a track record in healthcare resource allocation and reimbursement metrics.
- Shawn Tomasello was appointed a non-executive Director. As former Chief Commercial Officer at Kite Pharma and Pharmacyclics, and President of the Americas, Hematology and Oncology at Celgene, she brings substantial commercial and transactional experience.
- Dr Fred Grossman joined as Chief Medical Officer, bringing a wealth of commercial experience gained from numerous leadership roles at Eli Lilly, Johnson & Johnson, Bristol Myers Squibb, Sunovion and Glenmark. The appointment aligns closely with the Company's near term commercial objectives for its lead products.

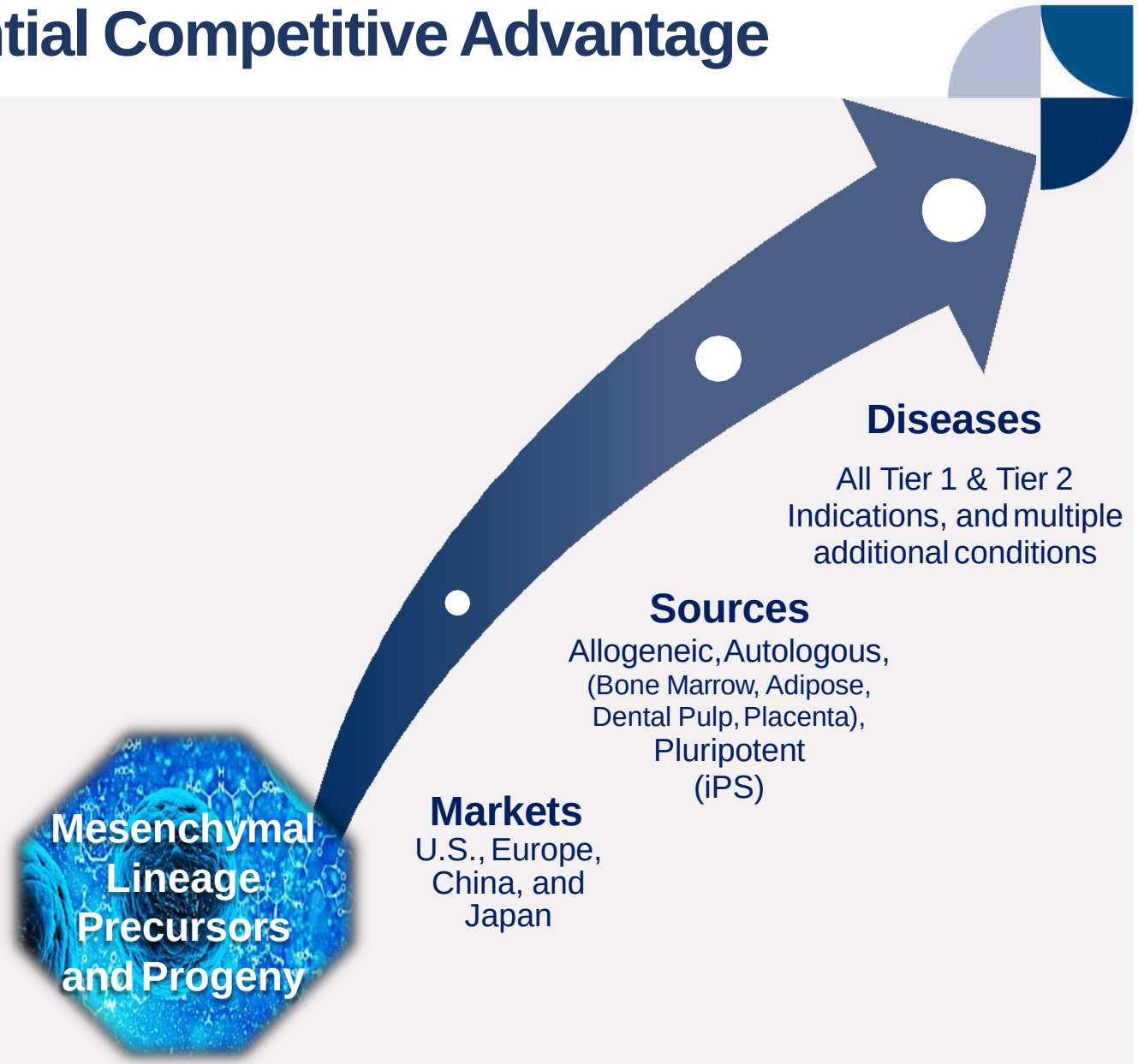
Commercial Scale Manufacturing Capability

- Scalable allogeneic “off-the-shelf” cellular medicine platform
- Manufacturing meets stringent criteria set by international regulatory agencies including FDA and EMA
- Robust quality assurance processes ensure final product with batch-to-batch consistency and reproducibility
- Culture expansion scalable for near term commercial needs
- Proprietary xeno-free technologies being developed to enable sufficient yields for long term global commercial supply
- Next generation processes using 3D bioreactors to reduce labor and drive down cost of goods

Lonza contract manufacturing facility in Singapore

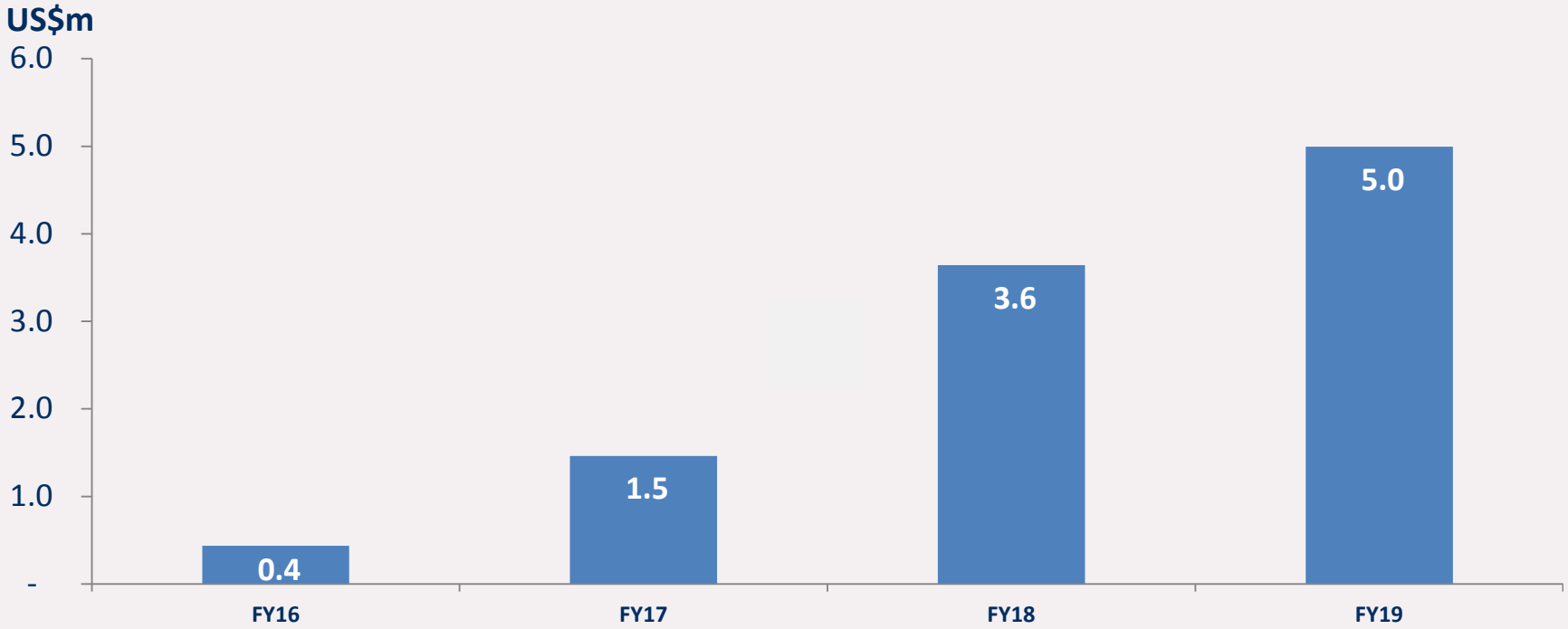
Global IP Estate Provides Substantial Competitive Advantage

- ~995 patents and patent applications (68 patent families) across all major jurisdictions
- Covers composition of matter, manufacturing, and therapeutic applications of mesenchymal lineage cells
- Enables licensing to third parties for different indications, when in alignment with our corporate strategy e.g.TiGenix (subsequently acquired by Takeda)
- Provides strong global protection against competitors seeking to develop products in areas of core commercial focus



Financials FY 2019

Revenues from Royalties on Japan Product Sales – 37% Year on Year Growth



- 37% growth in royalty revenue for the FY2019 year compared to FY2018 from sales of TEMCELL in Japan for SR-aGVHD by Mesoblast licensee JCR Pharmaceuticals Co. Ltd.
- 54% growth in royalty revenue for the quarter ended June 2019 compared to the quarter ended June 2018.

All results on this slide are reported in constant currency.

Revenues – Continued Growth in Royalties and Substantial Payments from Strategic Partnerships

For the year ending (US$m)	June 30, 2019	June 30, 2018
Upfront/milestone revenue	11.0	13.3
Commercialization revenue	5.0	3.6
Interest revenue	0.7	0.4
Total revenue	**16.7**	**17.3**

- Strategic partnerships drive revenues from upfront and milestone payments

  - US$10.0 million from licensee Tasly in FY2019
  - US$1.0 million from JCR in FY2019

  - US$11.8 million from licensee Takeda in FY2018
  - US$1.5 million from JCR in FY2018

Increased Investment in Commercial Manufacturing

Non-cash Gains in Comparable Period from Revaluation of Tax and Contingent Consideration

Profit and Loss for the year ending (US$m)	June 30, 2019	June 30, 2018
Total Revenue	16.7	17.3
Research and development	(59.8)	(65.9)
Manufacturing	(15.4)	(5.5)
Management & administration	(21.6)	(21.9)
Contingent consideration	(6.3)	10.5
Other operating income & expenses	(1.1)	1.3
Finance costs	(11.3)	(1.8)
(Loss)/Profit before tax	(98.8)	(66.0)
Income tax benefit	9.0	30.7
(Loss)/Profit after tax	(89.8)	(35.3)

Increase in loss primarily due to the following items:

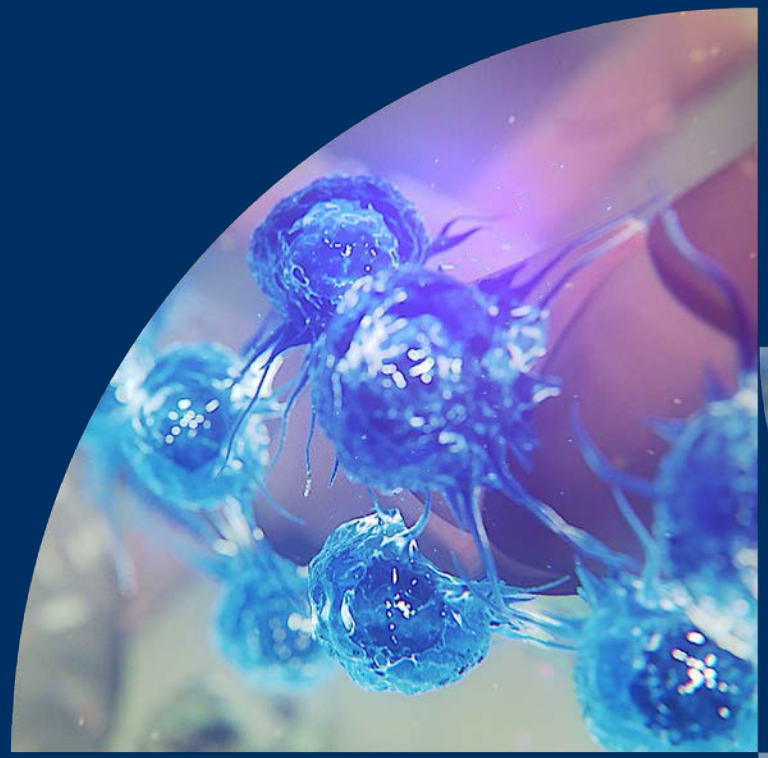
- in the current period:
  - o US$9.9 million increase in commercial manufacturing reflects investment to support potential launch for aGVHD product
  - o US$9.5 million of increased finance costs on non-dilutive capital inflows from Hercules and NovaQuest
  - o Partially offset by reduction in R&D

- and in the comparative period:
  - o a one-off non-cash income tax benefit of US$23.0 million due to a revaluation of tax liabilities given changes in tax rates
  - o non-cash US$10.5 million gain on contingent consideration for reduction of future payments to third parties

Reduction in Operating Net Cash Outflows for the Year Due to Increased Payments from Strategic Partnerships

For the year ending (US$m)	June 30, 2019	June 30, 2018
Operating net cash outflows	**(57.8)**	**(75.0)**
Investing net cash outflows	(1.0)	(1.2)
Financing net cash inflows	71.6	68.6
Net increase/(decrease) in cash	12.8	(7.6)

- 23% (US$17.2 million) reduction in net operating cash outflows for the year ended June 30, 2019, primarily due to increased payments from strategic partnerships during FY19.
- Cash reserves of US$50.4 million as at June 30, 2019.
- An additional US$35.0 million may be available under existing arrangements with Hercules Capital and NovaQuest, subject to achievement of certain milestones.
- In addition, Mesoblast has entered into a Subscription Commitment Letter with its largest institutional shareholder, M&G Investment Management, for US$15.0 million in Mesoblast ordinary shares, exercisable by the Company on or before 31 December 2019, subject to customary diligence and with pricing to be agreed at the time Mesoblast gives notice.



Lead Product Candidate
Remestemcel-L for aGVHD

Acute Graft Versus Host Disease (aGVHD)

Significant market opportunity for remestemcel-L

Burden of Illness

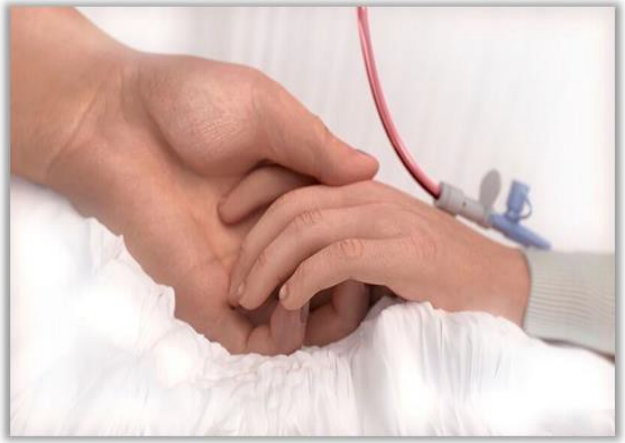
- aGVHD is a life-threatening complication that occurs in ~50% of patients receiving allogeneic bone marrow transplants (BMTs)[1]
- Steroid-refractory aGVHD is associated with **mortality rates as high as 90%[1,7] and significant extended hospital stay costs[2]**

Minimal Treatment Options

- There is only one approved treatment for SR-GVHD and **no approved treatment for children under 12 years old, outside Japan**
- In Japan, Mesoblast's licensee has received the only product approval for SR - aGVHD in both children and adults

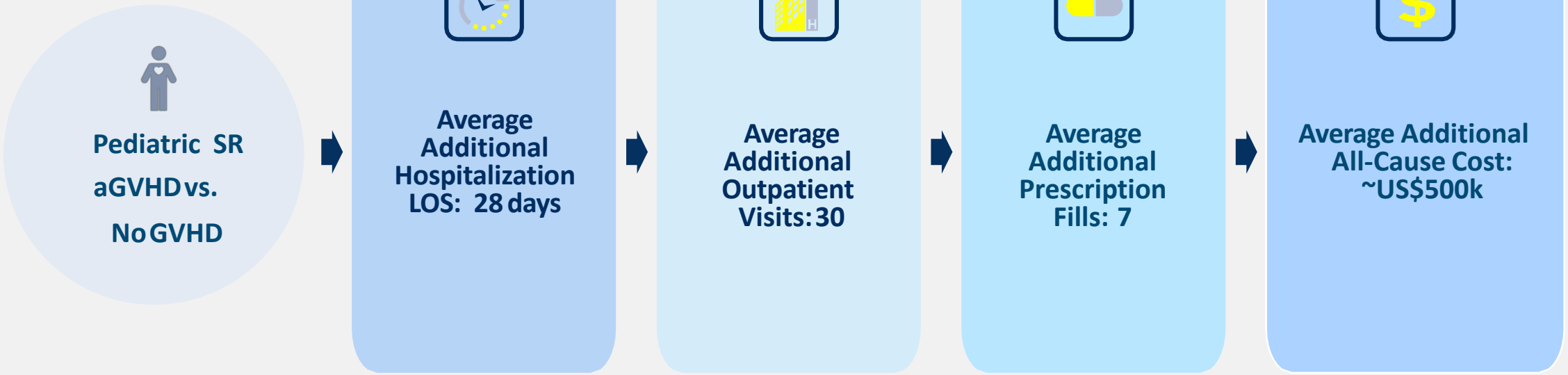
Market Opportunity

- >30,000 allogeneic BMTs performed globally (>20K US/EU) annually, ~20% pediatric[3,4]
- Our licensee, JCR Pharmaceuticals Co., Ltd launched TEMCELL® HS Inj.[5] in Japan for SR-aGVHD in 2016; reimbursed up to ~$USD195k[6]
- **SR-aGVHD represents $USD > 700m US/EU market opportunity[4,8]**



1. Westin, J., Saliba, RM., Lima, M. (2011) Steroid-refractory acute GVHD: predictors and outcomes. Advances in Hematology. **2**. Anthem-HealthCore/Mesoblast claims analysis (2016). Data on file **3.** Niederwieser D, Baldomero H, Szer J. (2016) Hematopoietic stem cell transplantation activity worldwide in 2012 and a SWOT analysis of the Worldwide Network for Blood and Marrow Transplantation Group including the global survey. **4.** Source: CIBMTR Current Uses and Outcomes of Hematopoietic Cell Transplantation 2017 Summary. Passweg JR, Baldomero, H (2016) Hematopoietic stem cell transplantation in Europe 2014: more than 40,000 transplants annually. **5.** TEMCELL is the registered trademark of JCR Pharmaceuticals Co. Ltd. **6.** Based on a ¥JPY = $USD 0.009375 spot exchange rate on market close on November 11, 2016. Amounts are rounded. Source: Bloomberg. 7. Axt L, Naumann A, Toennies J (2019) Retrospective single center analysis of outcome, risk factors and therapy in steroid refractory graft-versus-host disease after allogeneic hematopoietic cell transplantion. Bone Marrow Transplantation. 8.Data on file

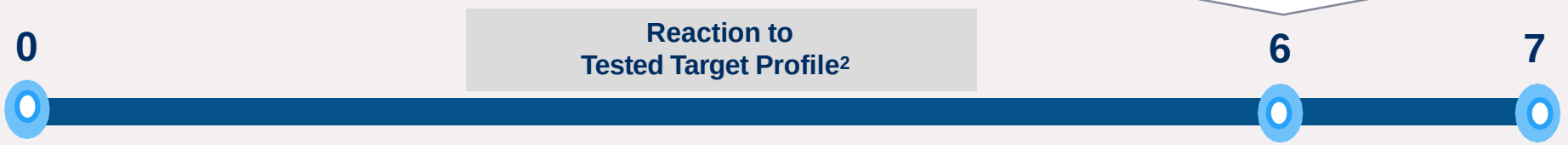
Remestemcel-L: SR-aGVHD is Associated with Significant Burden of Illness in Children in the U.S.[1]



1. European Hematology Association 2019 Congress Meeting: Abstract PF718, The economic and humanistic burden of graft-versus-host disease (GVHD) in pediatric patients: A systematic literature review (SLR)

Remestemcel-L: Results from Providers/Payers Indicate Near Maximal Rating on Product Attributes[1]

(n=20)



Most Significant Value Drivers for Remestemcel-L

- Day 28 overall response rate (especially grade C/D)
- Day 100 & Day 180 Survival rates
- No increase in infections
- Large clinical data set (n ~300)
- Ability to administer the drug outpatient
- Significant reduction in ICU stay

1. Data on file.
2. ZS Associates June 2018 Qualitative Market Research: MCO Medical Directors n=5, Transplant Center Directors n= 5, Hospital Pharmacy Directors n=5, AMC-based Hem/Oncs / KOLs n=3

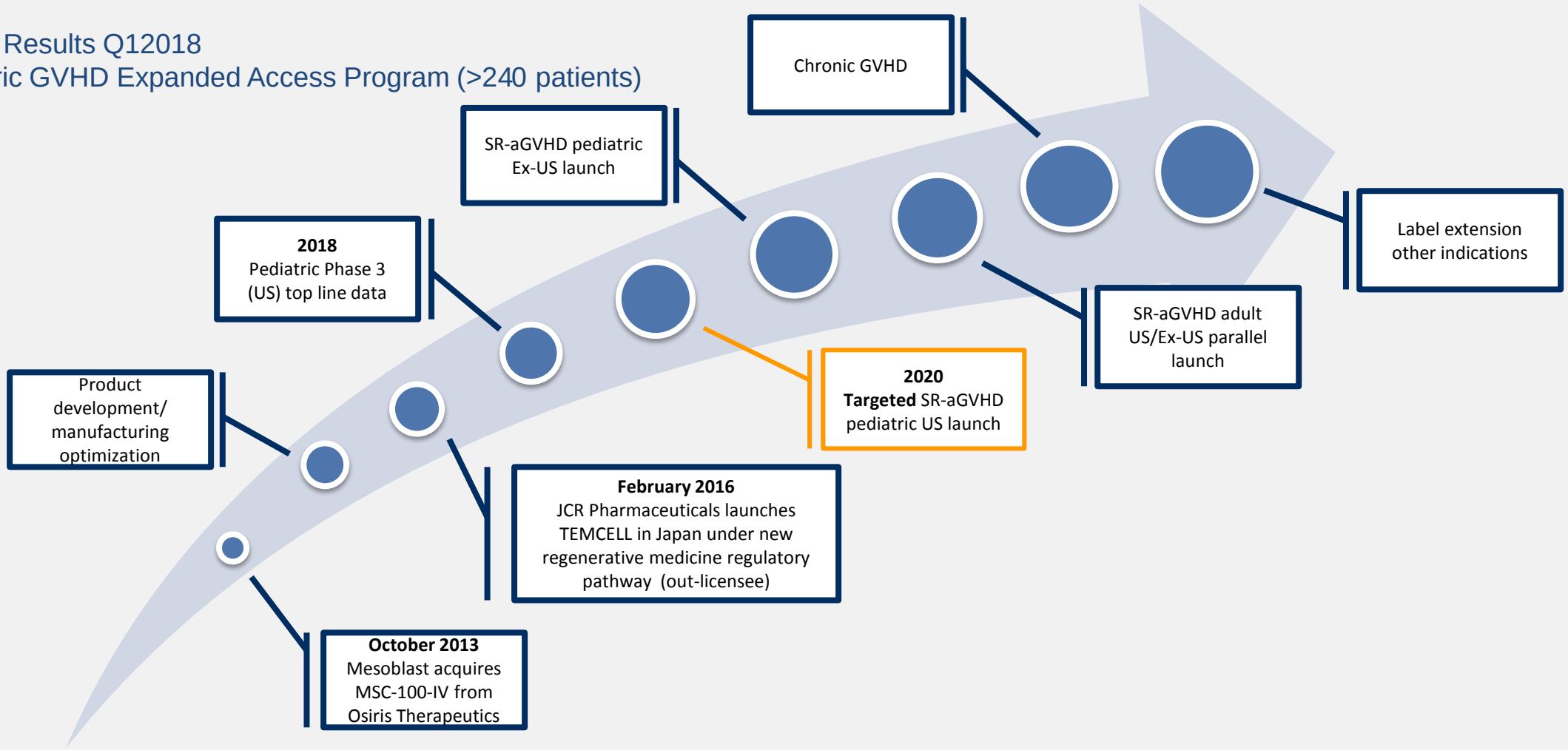
Remestemcel-L: U.S. Regulatory and Commercial Strategy

- US strategy for remestemcel-L informed by TEMCELL sales experience in Japan
- Rolling BLA submission to FDA initiated
- Fast Track designation provides eligibility for FDA priority review
- Ramp-up for inventory build is underway
- Commercialization strategy in place for product launch
- Building out efficient, targeted sales force - 15 centers account for ~50% of patients

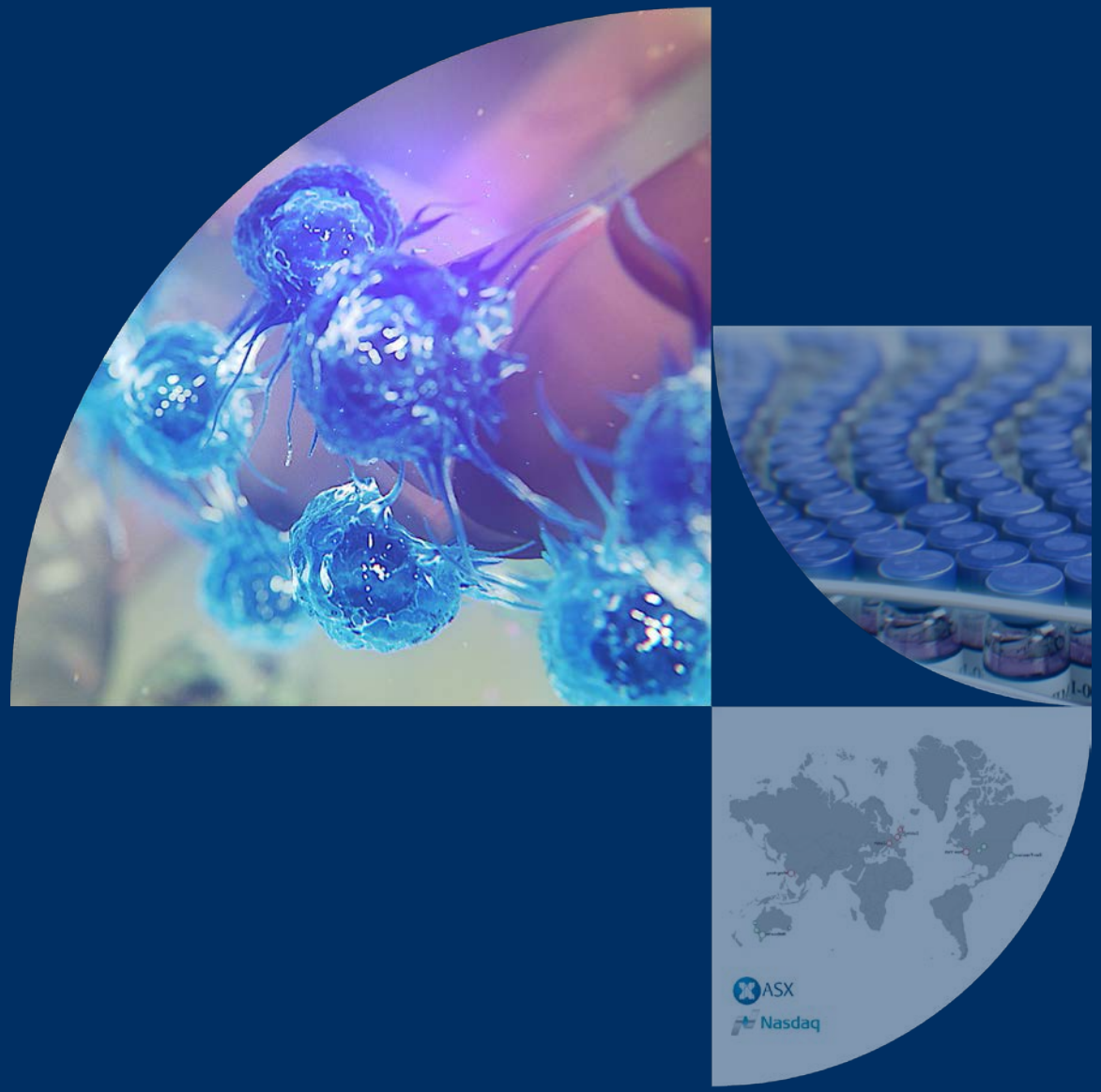
Remestemcel-L: Global GVHD Life Cycle Program

Mesoblast has over 10 years of experience in hematology-oncology space

Remestemcel-L:
- Positive Phase 3 Results Q12018
- Large US Pediatric GVHD Expanded Access Program (>240 patients)



Outlook



Anticipated FY2020 Milestones

Remestemcel-L for Steroid-Refractory Acute Graft Versus Host Disease

- Completion of BLA filing for remestemcel-L in the treatment of steroid refractory aGVHD in children (Q4 CY19)

Revascor for Advanced Heart Failure

- Phase 3 events-driven trial in advanced heart failure will complete when sufficient primary endpoints have accrued, likely by end CY19

Revascor for End-Stage Heart Failure

- Initiation of confirmatory Phase 3 trial of Revascor for the reduction of mucosal bleeding in end-stage heart failure patients implanted with a LVAD (Q4 CY19)

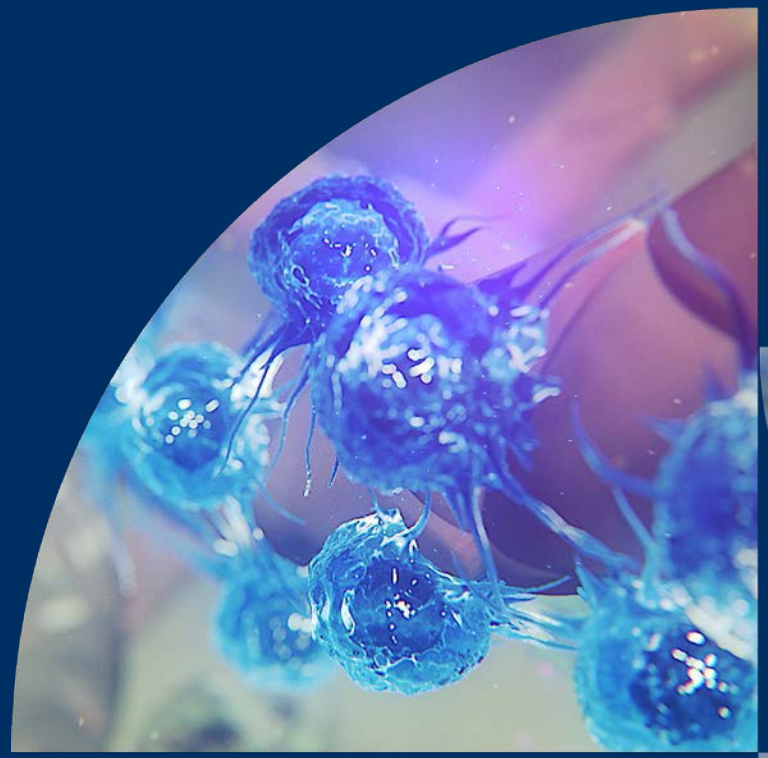
MPC-06-ID for Chronic Low Back Pain

- Patient follow up continues through 24-month assessment of safety and efficacy in Phase 3 trial for chronic lower back pain due to degenerative disc disease (H1 CY20) with readout planned (mid CY20)

Establish global and/or regional partnerships

- In advanced discussions on potential blockbuster products[1]

1. Mesoblast does not make any representation or give any assurance that such a partnering transaction will be concluded.



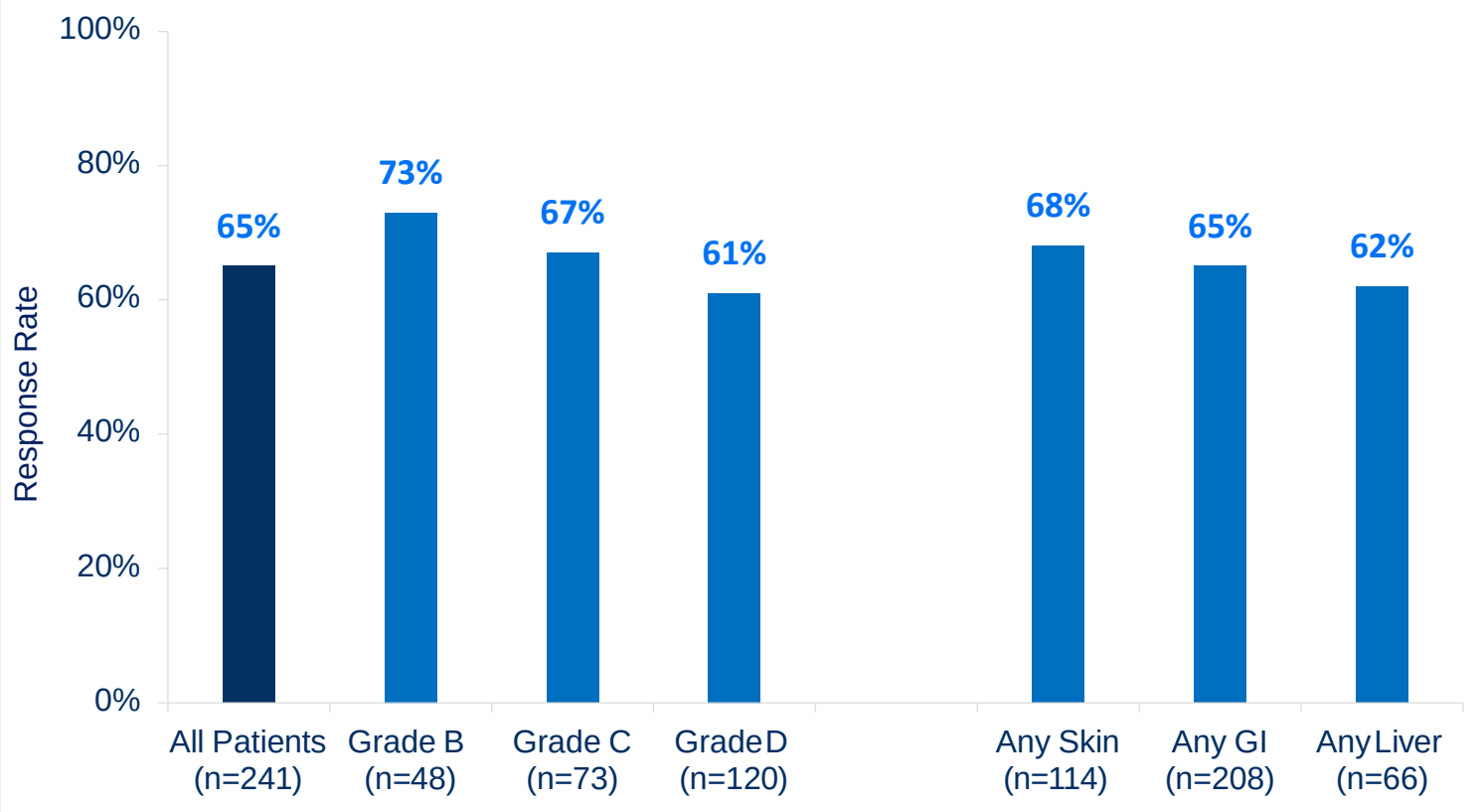
Additional Information
Development & Commercialization

Remestemcel-L: Expanded Access Program (Protocol 275)

Overall Day 28 Response in 241 Pediatric aGVHD Patients Receiving Remestemcel-L as First-line or Salvage Therapy After Failing Steroids[1]

Population: steroid-refractory aGVHD pediatric patients

- 241 pediatric patients undergoing HSCT were enrolled and treated at 50 sites in North America and Europe from 2007-2014
- Ages 2 months – 17 years
- Acute GVHD grades B-D (CIBMTR)
- Failed steroid treatment and multiple other agents
- aGVHD not improving after at least 3 days of methylprednisolone (at least 1 mg/kg/day or equivalent)



- Complete Response was 14%, Partial Response was 51%
- Responses were observed for all GVHD grades and did not differ by baseline organ involvement

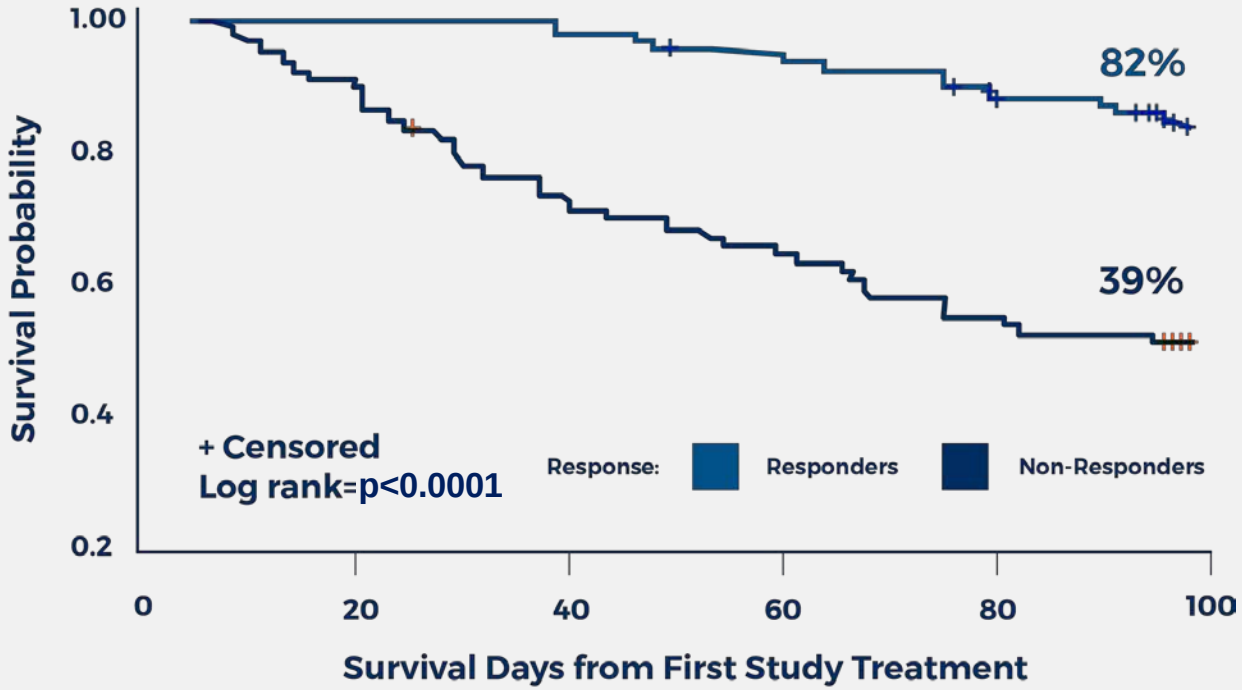
1. Kurtzberg et al: Presentation Tandem Feb 2016

Remestemcel-L: Expanded Access Program

Correlation of Day 28 Overall Response with Day 100 Survival, Using Remestemcel-L as First-line or Salvage Therapy After Failing Steroids and/or Additional Treatments[1]

Remestemcel-L in Children with SR-aGVHD who failed multiple other modalities

- Survival of Pediatric Patients Treated with Remestemcel-L 28-Day Responders vs Non-responders n=241



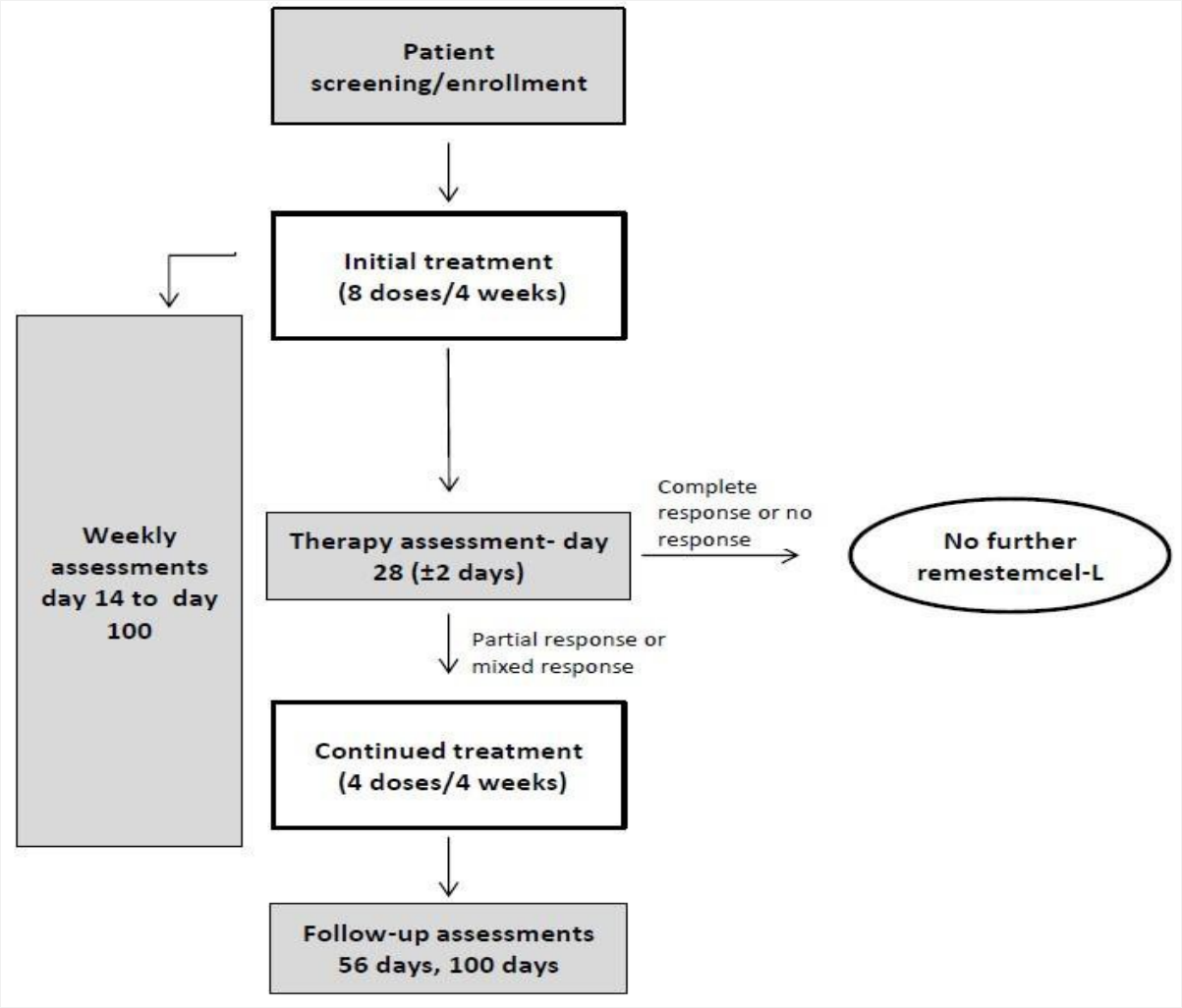
- In 241 children under EAP, **Overall Response** (CR+PR) at Day 28 was **65%** (95% CI: 58.9%, 70.9%)
- **Day 100 survival** correlated with overall response and was significantly improved in those who responded at Day 28 **(82% vs. 39%, p<0.0001)**

1. Kurtzberg et al: Presentation Tandem Feb 2016

Remestemcel-L:

Phase 3 Pediatric Trial (GVHD001) - First-line therapy in aGVHD after failing steroids[1]

- Multi-center, single-arm, open-label study to evaluate efficacy and safety to day 100 (GVHD001) and from day 100 to day 180 (GVHD002)
- 55 pediatric patients (2 months to 17 years)
- aGVHD following allogeneic HSCT failing systemic corticosteroid therapy
- Grade B aGVHD involving liver and/or GI tract with or without concomitant skin disease
- Grades C and D aGVHD involving skin, liver and/or GI tract
- Primary endpoint: **Overall response at Day 28**
- Key secondary endpoint: Survival at Day 100



1. Data on file.

Remestemcel-L: Phase 3 Trial

Protocol GVHD001 – Demographics[1]

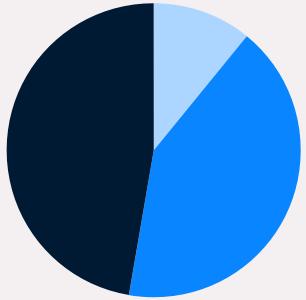
Subjects Enrolled	55
Age (years)	
Mean (SD)	7.8 (5.44)
Median (minimum, maximum)	7.6 (0.6, 17.9)
Gender	
Male	35 (63.6%)
Female	20 (36.4%)
Underlying Disease	
AML	18 (32.7%)
ALL	12 (21.8%)
Anemia	5 (9.1%)
CML	4 (7.3%)
SickleCell	3 (5.5%)
JML	2 (3.6%)
MDS	2 (3.6%)
Other	9 (16.4%)

1. Data on file.

Remestemcel-L: Phase 3 Trial

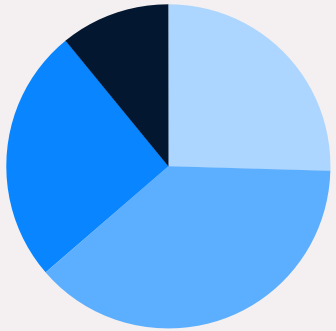
Protocol GVHD001 - Disease characteristics reflect aGVHD severity[1]

GVHD Grade at Baseline



- 89% of subjects had Grade C/D disease at baseline
- 47% of subjects had Grade D disease at baseline

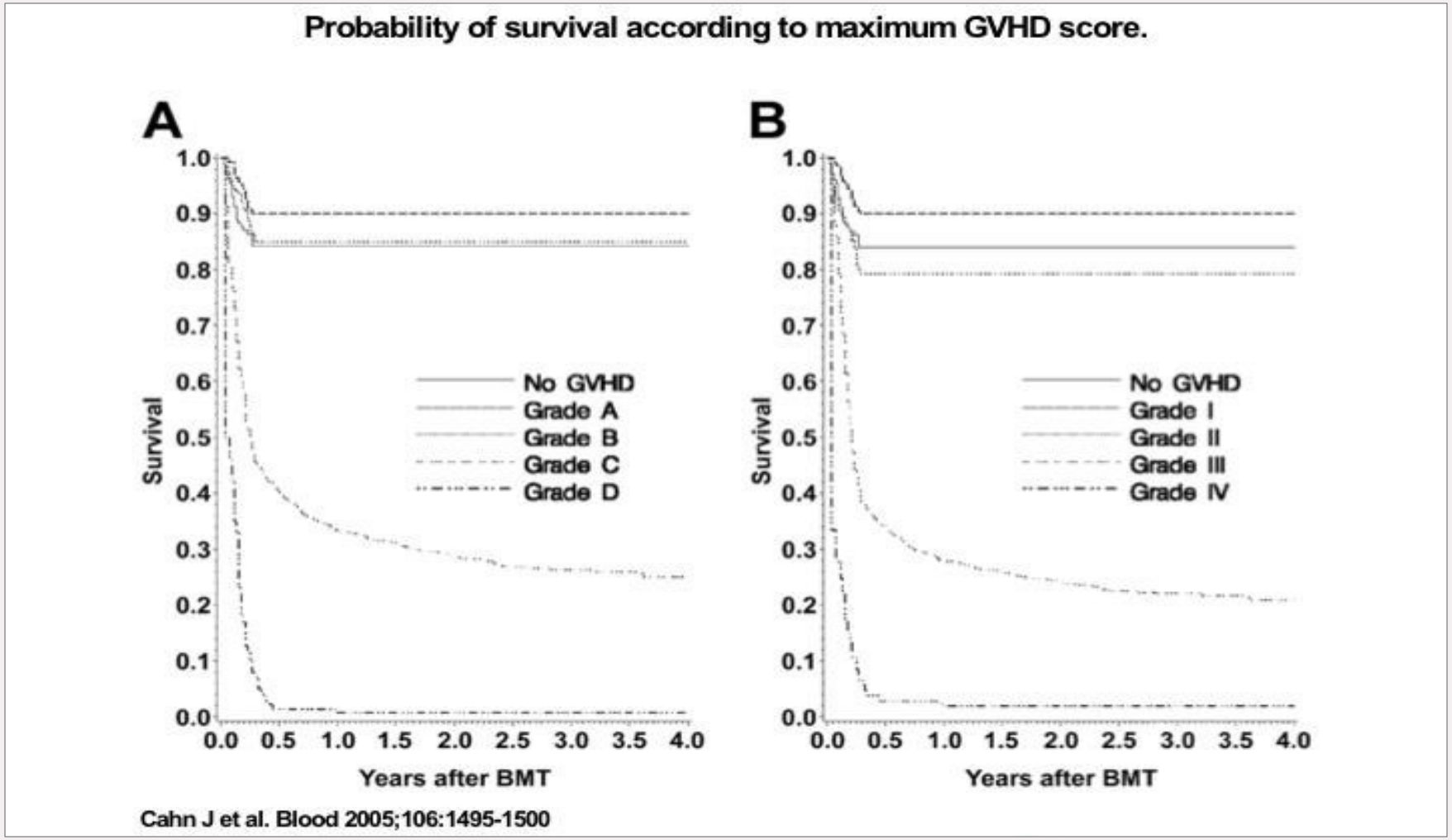
Baseline Organ Involvement



- 26% of subjects had Skin involvement only
  - All had stage 3 (n=10) or stage 4 (n=4) disease
- 38% of subjects had Lower GI involvement only
  - 16/21 had stage 3 (n=6) or stage 4 (n=10) disease
- 36% of subjects had multi-organ involvement, all with Lower GI
  - 6/20 had all three organs involved
  - 10/20 had Lower GI + Skin
  - 4/20 had Lower GI + Liver

1. Data on file.

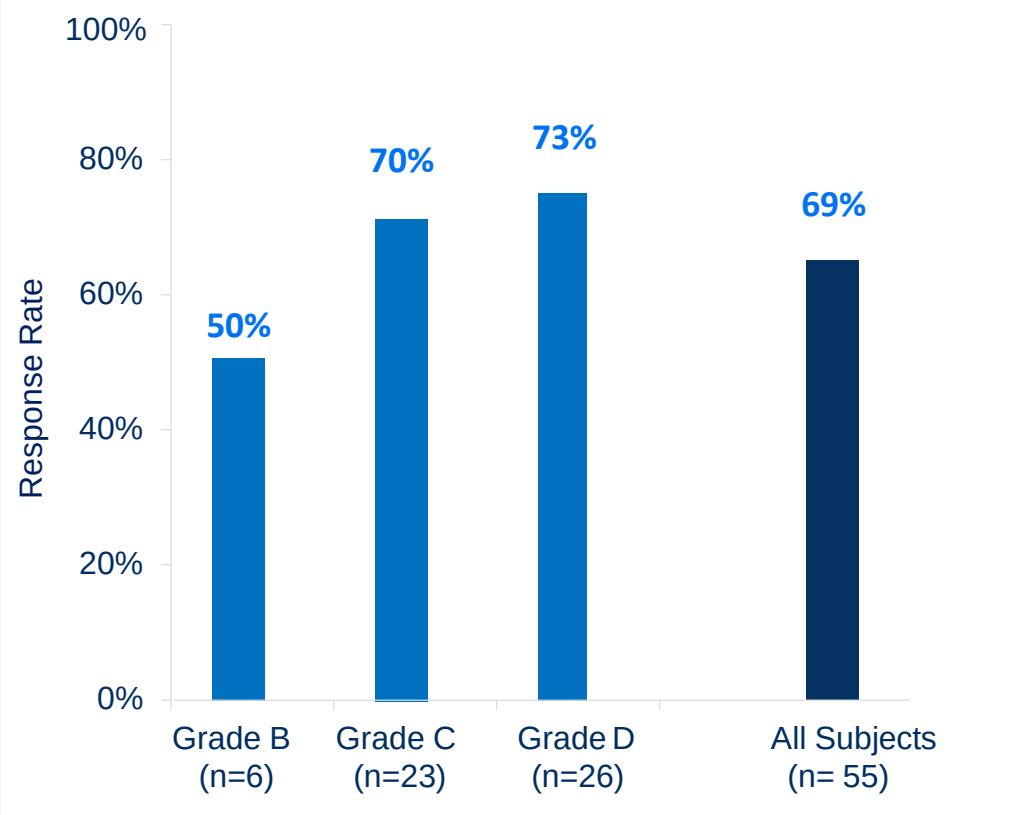
Grade C/D GVHD has Significantly Worse Survival than Grade A/B



Remestemcel-L: Phase 3 Trial

Protocol GVHD001 - Primary efficacy overall response at Day 28 was 69%, p=0.0003[1]

- 69% Overall Response rate at Day 28 (29% CR + 40% PR); (95% CI: 55%, 81%)
- p-value calculated from the binomial distribution, under the assumption of a 0.45 success rate under the null hypothesis



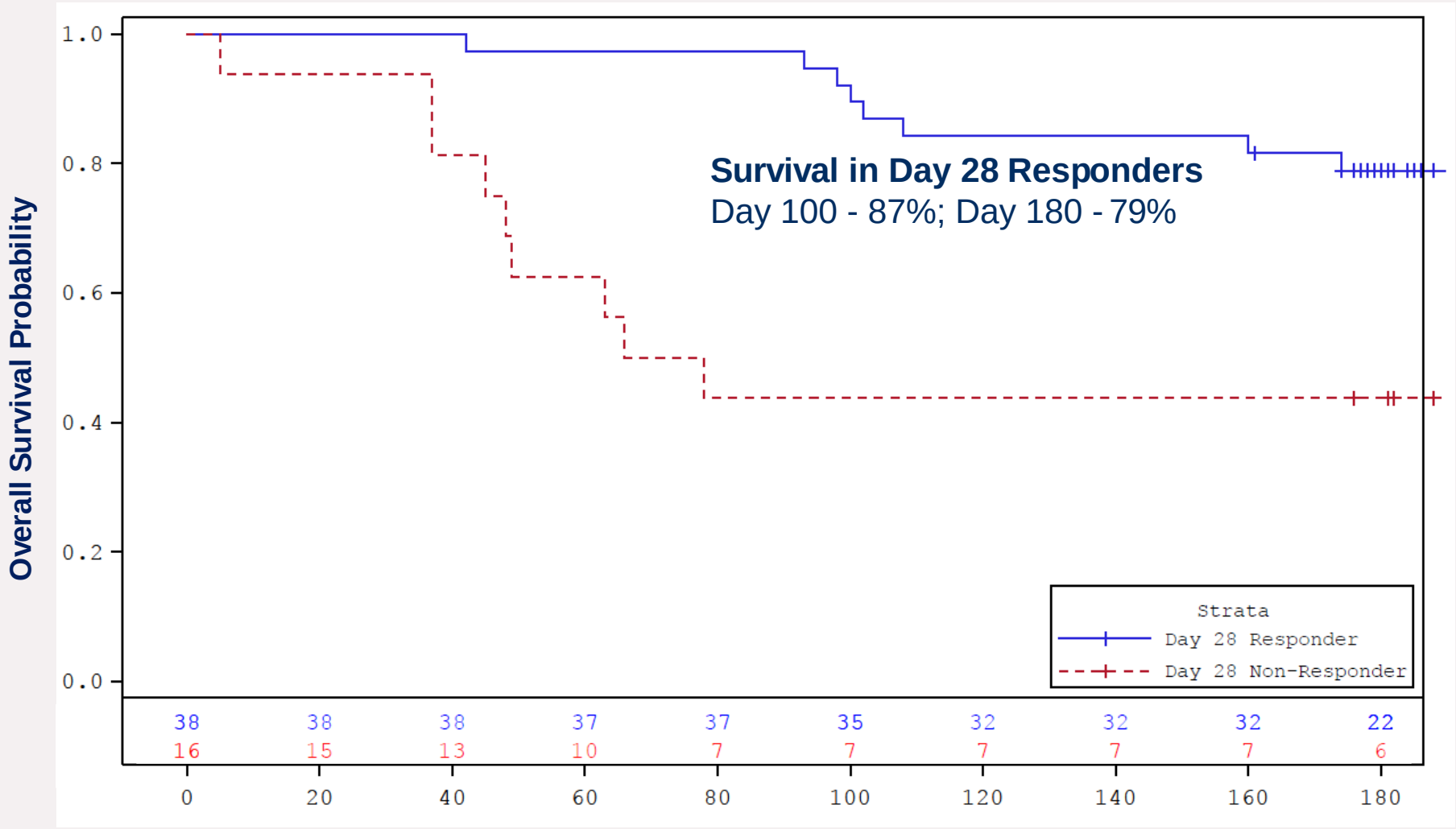
1. Data on file

Remestemcel-L: Phase 3 Trial[1]

- Phase 3 study evaluated remestemcel-L in 55 children to improve overall response rate and survival
  - 89% of children had grade C/D disease, the most severe form and historically associated with up to 90% mortality[2,3]
- Study successfully met the primary endpoint of improved Day 28 Overall Response (OR)
  - 69% vs 45% protocol-defined historical control rate (p=0.0003)
- Day 100 Overall Survival 75%, with 87% survival in Day 28 responders
- Day 180 Overall Survival 69%, with 79% survival in Day 28 responders
- Remestemcel-L infusions well tolerated
- Findings consistent with previous results in 241 SR-aGVHD children under expanded access program who failed to respond to multiple biologic agents[4]

1. Data on file.
2. Westin, J., Saliba, RM., Lima, M. (2011) Steroid-refractory acute GVHD: predictors and outcomes. Advances in Hematology.
3. Axt L, Naumann A, Toennies J (2019) Retrospective single center analysis of outcome, risk factors and therapy in steroid refractory graft-versus-host disease after allogeneic hematopoietic cell transplantation. Bone Marrow Transplantation
4. Kurtzberg J. et al. Effect of Human Mesenchymal Stem Cells (remestemcel-L) on Clinical Response and Survival Confirmed in a Large Cohort of Pediatric Patients with Severe High-Risk Steroid-Refractory Acute Graft Versus Host Disease. BBMT. 2016;22.

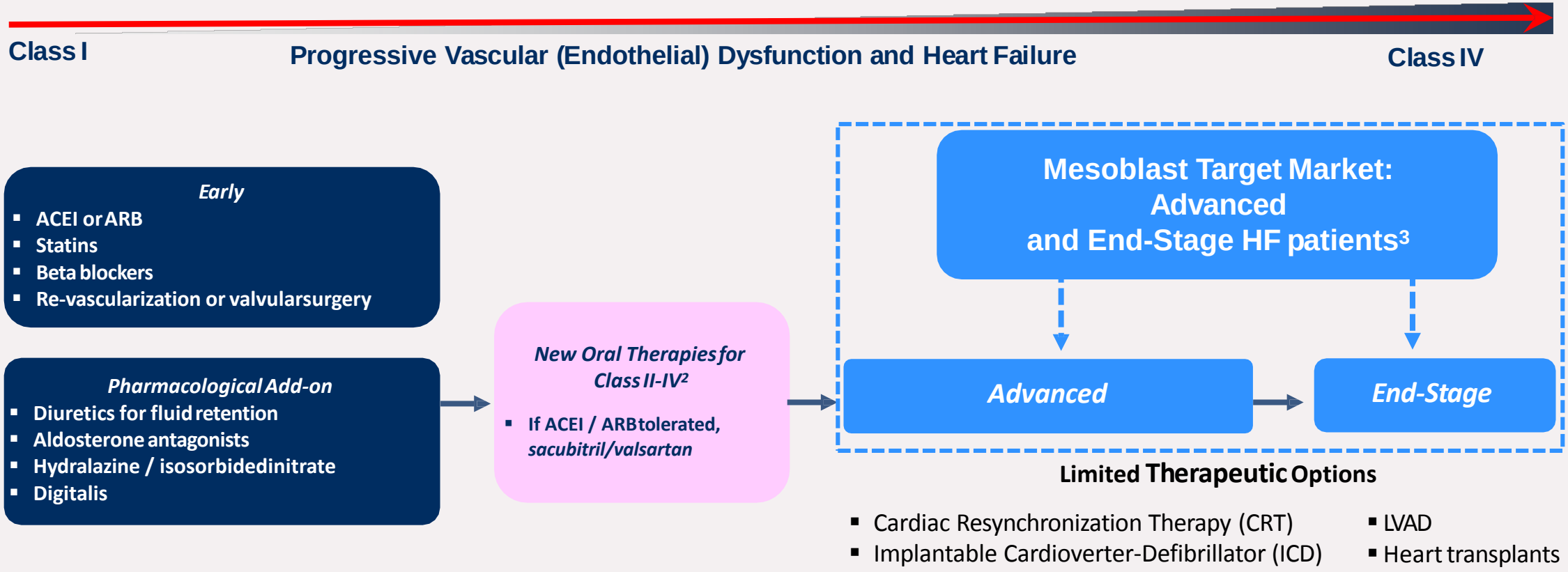
Remestemcel-L: Protocol GVHD001/002 survival[1]



1. Data on file.

Advanced and End-Stage Heart Failure

Common Treatment Pathway in Progressive Heart Failure[1]



1. Source: Simon-Kucher & Partners 2017. Primary research 2017; Payers n=35, KOLs n=15,Cath lab managers n=4.
2. Corlanor® (ivabradine) approved by FDA (April 2015). ENTRESTO® (sacubitril/valsartan) approved by FDA (July 2015).
3. GlobalData-PharmaPoint Heart Failure (2016); McMurray et al., 2012;Yancy et al., 2013, 2016 ACC/AHAHFSA Focused Update on New Pharmacological Therapy for Heart Failure: An Update of the 2013 ACCF/AHA Guideline for the Management of Heart Failure.

Advanced Heart Failure

Revascor – Commercial opportunity

Burden of Illness

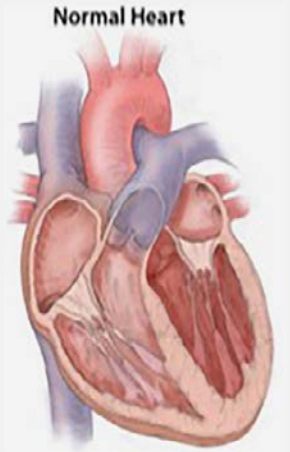
- Approx. 8 million patients with chronic heart failure by 2030 in US alone[1]
- 17-45% globally die within 1 year of hospital admission[1]
- Majority of advanced heart failure patients die within 5 years[1]

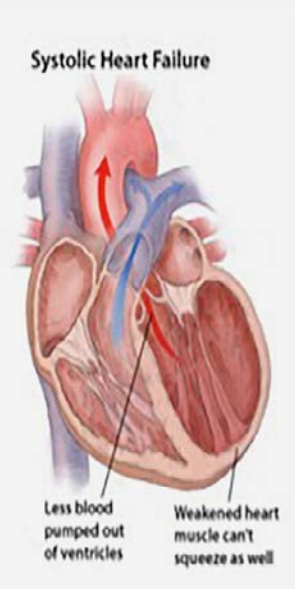
Limited Options / Unmet Need

- Despite recent advances in newly approved drugs, limited treatment options are available for patients with advanced heart failure[2]
- New therapies to reduce hospitalizations and mortality in patients with advanced heart failure who have failed other therapies
- Area of great need: NYHA class III-IV where event rate is highest

Market Opportunity

- US healthcare costs for NYHA class II-IV patients $US115bn/year[4]
- Hospitalizations account for ~69% of expenditure[3-5]
- **Multi-billion dollar annual market opportunity in US**[4,5]





1. Heart Failure: Preventing disease and death worldwide – European Society of Cardiology 2014., 2. ACC/AHAHFSA Focused Update on New Pharmacological Therapy for Heart Failure: An Update of the 2013 ACCF/AHA Guideline for the Management of Heart Failure., 3. Gurwitz JH, Magid DJ, Smith DH, et al. Contemporary Prevalence and Correlates of Incident Heart Failure with Preserved Ejection Fraction. The American Journal of Medicine. 2013;126(5):393-400. Derived by applying a HF-REF prevalence rate of 32.6% to the U.S. rate of 5.7m U.S. patients., 4.A Reevaluation of the Costs of Heart Failure and its Implications for Allocation of Health Resources in the United States. Voigt J. Clinl.Cardiol. 37, 5, 312-321 (2014)., 5.The Medical and Socioeconomic Burden of Heart Failure: A Comparative Delineation with Cancer. Dimitrios, F. International Journal of Cardiology (2015), doi: 10.1016/j.ijard.2015.10.172.

Revascor: Phase 2 Randomized, Controlled Trial Identified Optimal Therapeutic Dose and Target Patient Population for Phase 3

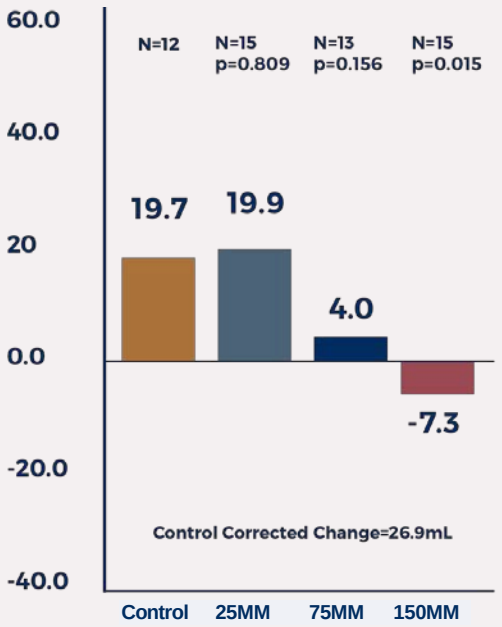
Objectives

- Identify a dose response and an optimal therapeutic dose
- Identify optimal target population for therapeutic effect
- Evaluate placebo vs. 25, 75, 150 million MPCs injected by endomyocardial catheter in 60 patients with class II/III heart failure and EF<40%

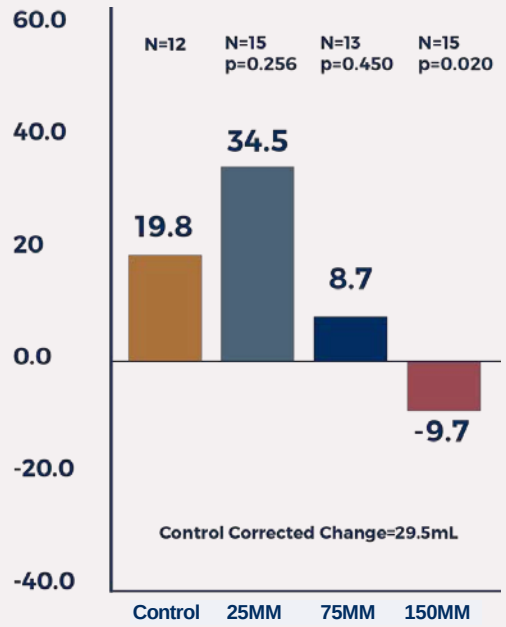
Results

- At 6 months: Dose-dependent effect seen on left ventricular remodeling, with 150 million cell dose (MPC-150-IM) showing greatest effect vs. controls

LVESV Month 6 -Baseline



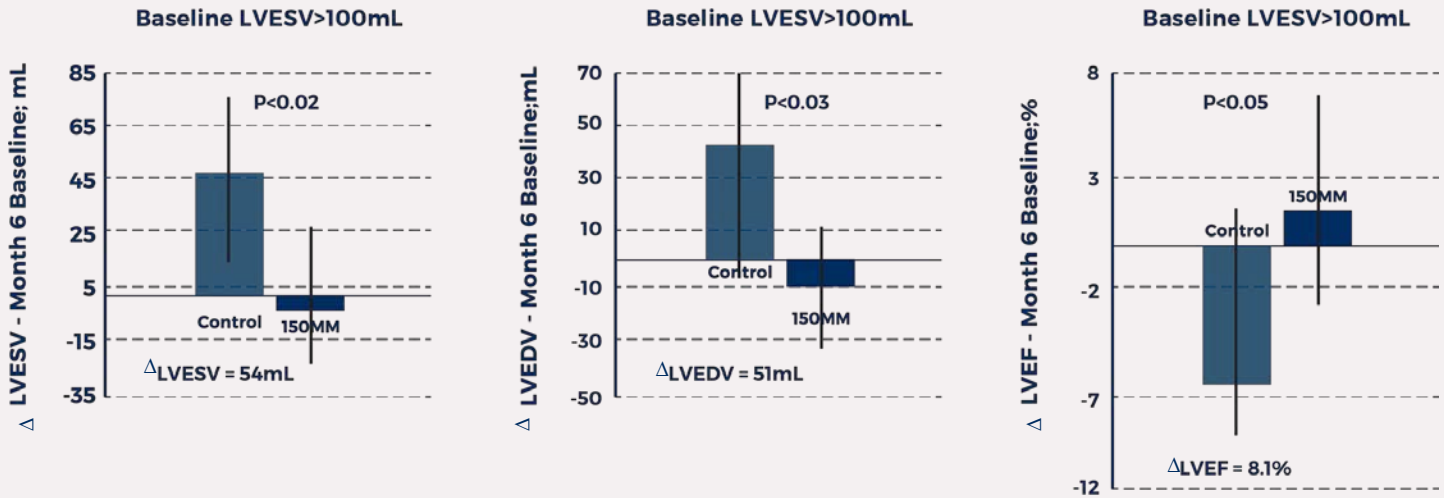
LVEDV Month 6 -Baseline



Source: Circ Res. 2015; 117:576-584. Perin E et al. A Phase II Dose-Escalation Study of Allogeneic Mesenchymal Precursor Cells in Patients With Ischemic or Non-Ischemic Heart Failure. LVESV = Left ventricular end systolic volume; LVEDV = Left Ventricular End-Diastolic Volume; EF = Ejection Fraction.

Revascor: Therapeutic Benefit on LV Remodeling in Phase 2 Subjects with LVESV >100ml[1]

- Placebo corrected benefit of 150MM cell dose on cardiac volumes and ejection fraction at 6 months was greatest in patients with more advanced heart failure as defined by baseline LVESV>100ml at baseline

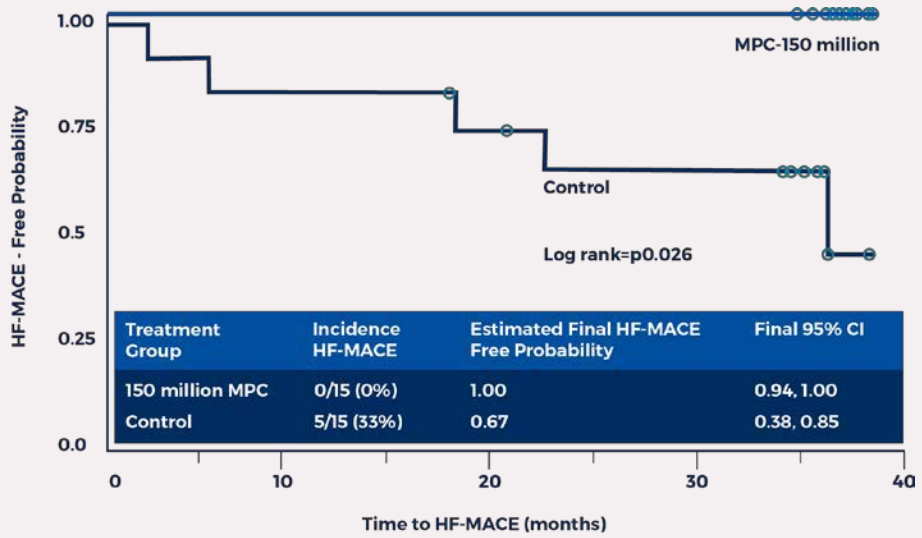


	Change (Entire cohort) Month 6 minusbaseline			Change (LVESV>100mL) Month 6 minusbaseline			
	PBO(n=15)	150M MPC (n=15)	Δ, PBO corrected	PBO (n=7)	150M MPC (n=11)	Δ, PBO corrected	P-values
LVESV	+20	-7	-27	+46	-8	-54	<0.02
LVEDV	+20	-10	-30	+41	-10	-51	<0.03
LVEF	-2.3	+0.6	+2.9	-6.4	+1.7	+8.1	<0.05

1. Source : Perin et al., Journal of Cardiac Failure 2015; Vol 21(8): S107; 19th Annual Scientific Meeting of the Heart Failure Society of America, Emerson et al. LVESV = Left ventricular end systolic volume; LVEDV = Left Ventricular End-Diastolic Volume; LVEF = Left Ventricular Ejection Fraction.

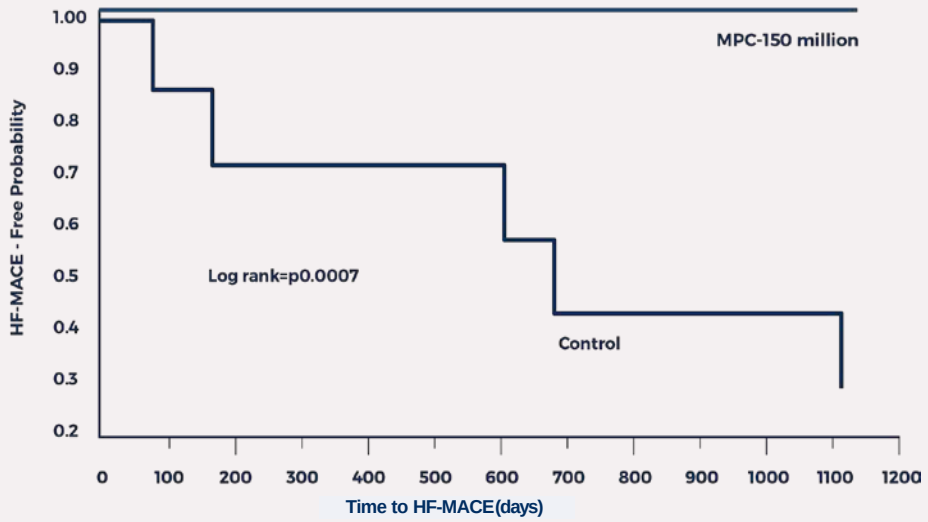
Revascor: Single Dose Prevented Any HF-MACE for 36 Months in Patients at Highest Risk of Recurrent Events and Death (Those with LVESV>100ml) in Phase 2

% HF-MACE Kaplan-Meier Curve over 36 months following treatment in allpatients[1]



Treatment Group	Incidence HF-MACE	Estimated Final HF-MACE Free Probability	Final 95% CI
150 million MPC	0/15 (0%)	1.00	0.94, 1.00
Control	5/15 (33%)	0.67	0.38, 0.85

HF-MACE Kaplan-Meier Curve over 36 monthsfollowing treatment in patients withLVESV>100ml[2]



- Over 36 months, patients receiving 150M MPC had significantly greater probability of remaining free of a first HF-MACE vs. controls (0% vs. 33%, p = 0.026 by log-rank)
- All HF-MACE events occurred in controls with baseline Left Ventricular End Systolic Volume (LVESV)>100ml, where the treatment effect size was even greater (0% vs. 71%, p = 0.0007 by logrank)
- Controls with baseline LVESV>100ml had 11total/recurrent HF-MACE events over 36 months vs. 0 in matched patients receiving 150M MPCs (p=0.0007)

1. HF-MACE is defined as a composite of cardiac related death or non-fatal heart failure hospitalisations. 2. Circ Res. 2015; 117:576-584. Perin E et al. A Phase II Dose-Escalation Study of Allogeneic Mesenchymal Precursor Cells in Patients With Ischemic or Non-Ischemic Heart Failure 3. Journal of Cardiac Failure 2015; Vol 21(8): S107; 19th Annual Scientific Meeting of the Heart Failure Society of America, Emerson et al.

Advanced Heart Failure

Revascor - Phase 3 trial fully enrolled

- Trial design is 1:1 randomized, controlled, double blinded; conducted over 55 sites across North America using 150 million cell dose vs control
- Events-driven Phase 3 trial completed enrollment of 566 patients in February 2019
- Primary endpoint: reduction in recurrent heart failure-related major adverse cardiac events such as heart failure-related hospitalizations and cardiac death
- Secondary endpoint: reduction in terminal cardiac events
- Target patient population enriched for those likely to be both highest risk for events and greatest responders to Revascor therapy
- ~ 90% of events in this Phase 3 trial have been accrued and validated

End-Stage Heart Failure

Revascor – Commercial opportunity in reducing GI bleeding in patients with LVADs

Burden of Illness

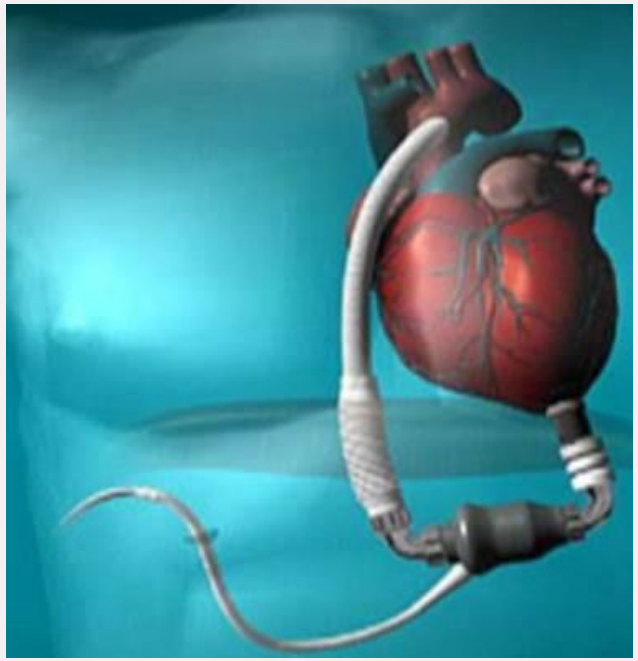
- In the US there are approx. 250,000–300,000 patients annually who suffer from advanced systolic heart failure (NYHA Class III–IV)[1]
- Despite optimal medical therapy, mortality exceeds 50% in class IV patients[1]

Ongoing Unmet Need

- LVADs have improved survival, but morbidity remains high with patients on average experiencing greater than two hospitalization annually[2]
- Gastrointestinal (GI) bleeding is the leading cause of non-surgical hospitalizations in LVAD patients[2]
- **Device attributable major adverse events (DAEs) can cost on average $USD46.5k per hospitalization[2]**

Market Opportunity

- Approx. 4,500 – 5,500 assist devices are implanted annually in the US[3, 4]
- **US LVAD market is growing double-digit CAGR and represents significant market growth opportunity[3,4]**
- US targeted commercial footprint provides low cost market entry



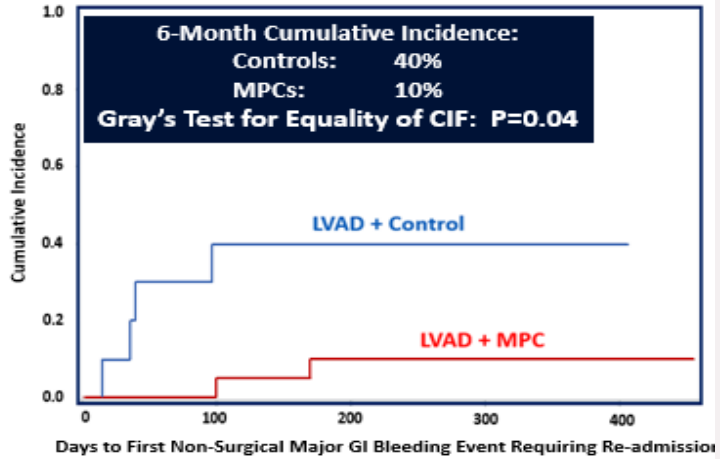
[1]Gustafsson G, Rogers J. (2017) Left ventricular assist device therapy in advanced heart failure: patient selection and outcomes, [2] Mehra, MR Salerno C, Cleveland JC (2018) Health care resources use and cost implications in the MOMENTUM 3 long-term outcome study: a randomized controlled trial of a magnetically levitated cardiac pump in advanced heart failure, [3]Agency for Healthcare Research and Quality – Healthcare Cost and Utilization Project – claims analysis using ICD-9 37.6 implantation of heart and circulatory assist systems, [4] Data on File

End-Stage Heart Failure

Revascor –Trials demonstrated reduced GI bleeding events in LVAD patients

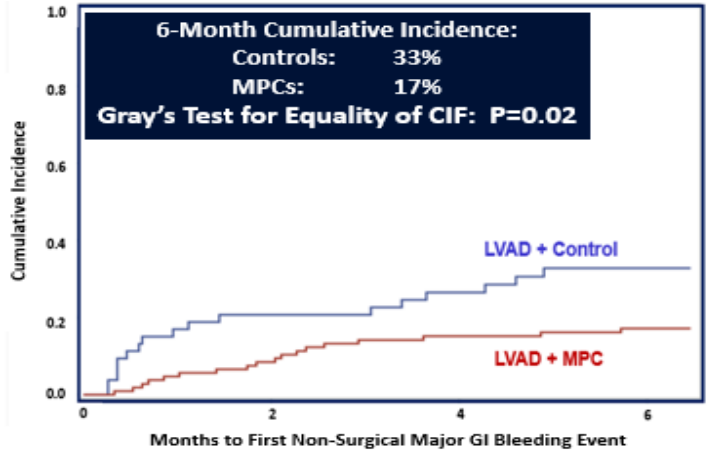
MPCs prolong time-to-first major GI bleeding event and reduced cumulative major GI bleeding events in two randomized controlled trials in LVAD patients[1,2]

Pilot Randomized Controlled Trial (LVAD-MPC Study #1)



MPC (n = 20)	Control (n = 10)	P-value
Event Rate (100-Pt-Months)	Event Rate (100-Pt-Months)	
4.2	**14.2**	**0.06**

Randomized Controlled Trial (LVAD-MPC Study #2)



MPC (n = 106)	Control (n = 53)	P-value
Event Rate (100-Pt-Months)	Event Rate (100-Pt-Months)	
3.8	**15.9**	**<0.001**

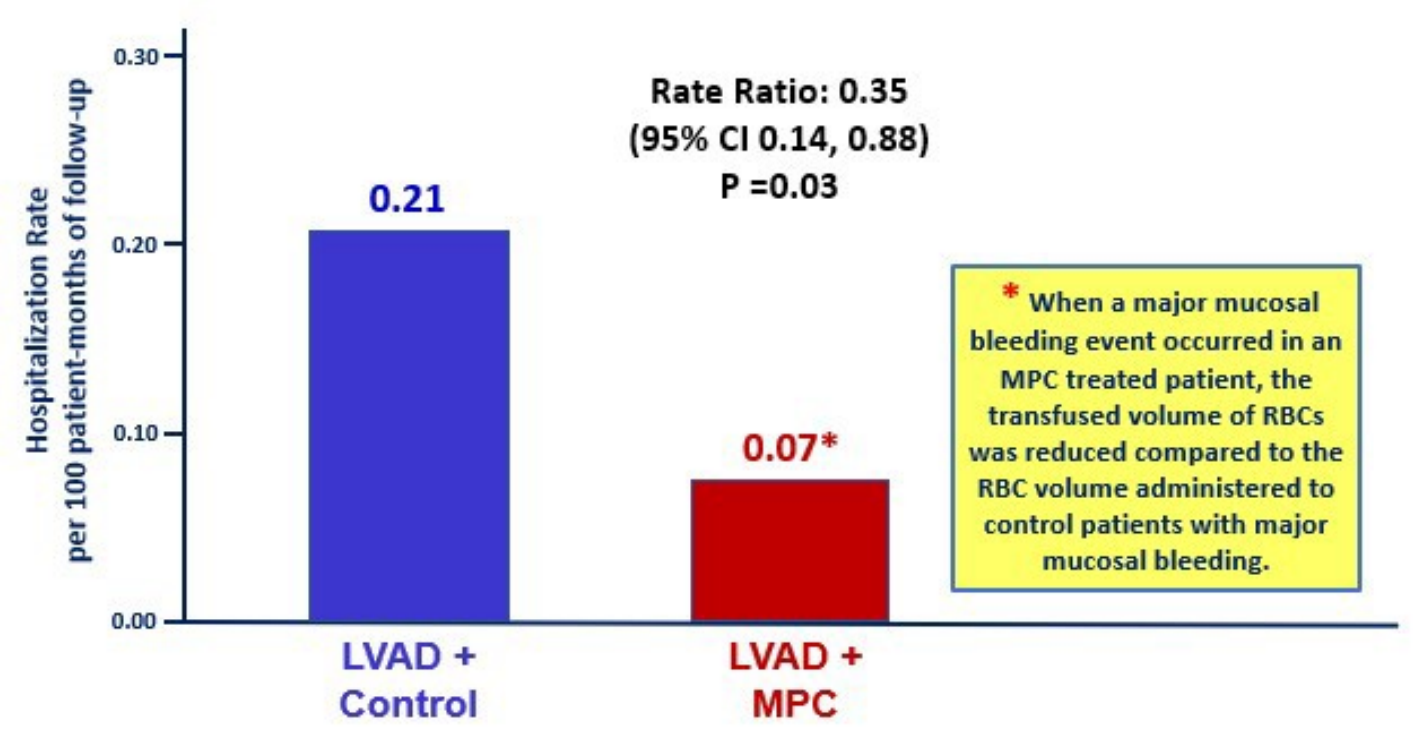
Rate of major GI bleeding events over six months in LVAD patients reduced by 70% and 76% with MPCs in two randomized controlled trials

1. Mesoblast internal data post-hoc analysis 2017 (clinicaltrials.gov; identifier: NCT01442129). 2. Presented at American Heart Association Scientific Sessions 2018.

End-Stage Heart Failure

Revascor —Reduced hospitalization rate from GI bleeding in Phase 2 trial

MPCs Reduce Hospitalization Rate from GI Bleeding by 65% in 159-Patient Phase 2 Trial[1]



1 Presented at American Heart Association Scientific Sessions 2018

Chronic Low Back Pain (CLBP)

MPC-06-ID – Market opportunity in CLBP due to disc degeneration

Burden of Illness

- Back pain causes more disability than any other condition[1]
- Inflicts substantial direct and indirect costs on the healthcare system,[1] including excessive use of opioids in this patient population[2]

Minimal Treatment Options

- Treatment options for patients with CLBP who fail conservative therapy include opioids and surgery
- 50% of opioid prescriptions are for CLBP[2]

Unmet Need

- Novel therapeutic approach for durable improvement in pain and function
- Potential alternative for opioid use or surgical intervention

Market Opportunity

- MPC-06-ID development focused on over ~3.2m patients with CLBP due to degenerative disc disease (DDD) in US alone[3,4,5]
- **US market opportunity >$US $1billion**[3,4,5.6]

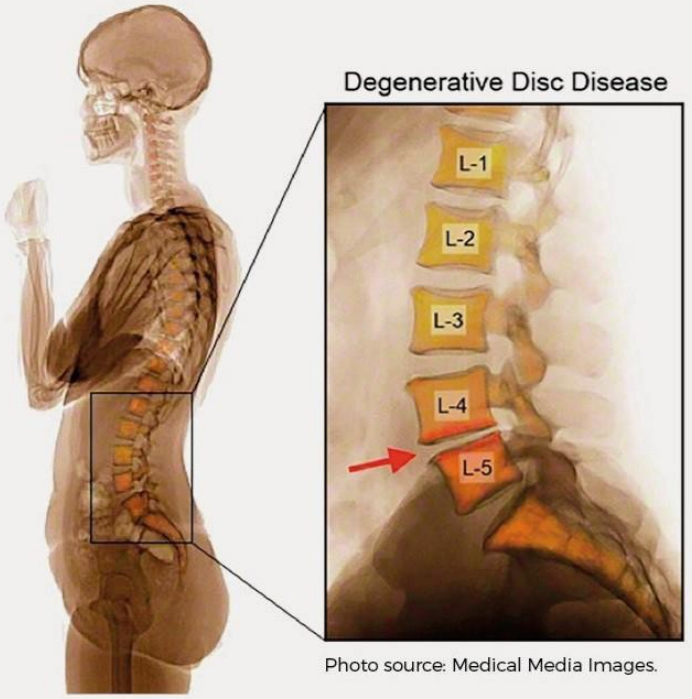


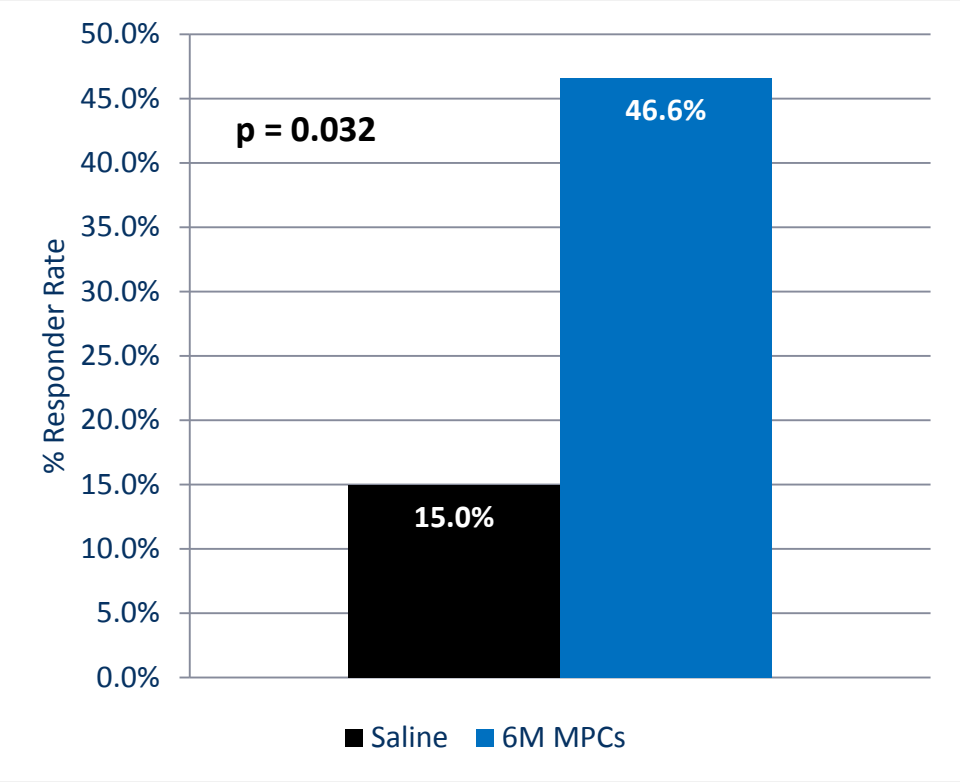
Photo source: Medical Media Images.

1. Williams, J., NG, Nawi, Pelzter, K. (2015) Risk factors and disability associated with low back pain in older adults in low-and middle-income countries. Results from the WHO Study on global ageing and adult health (SAGE). PloS One. 2015; 10(6): e0127880., **2.** Decision Resources: Pain Management Study, Chronic Pain December 2013., **3.** Decision Resources: Chronic Pain December 2015., **4**. LEK & NCI opinion leader interviews, and secondary analysis., 5**.** Navigant: Commercial Assessment for a Proprietary Cell-Based Therapy for DDD in the U.S. and the EU3 – August 2014. **6**. Data on File.

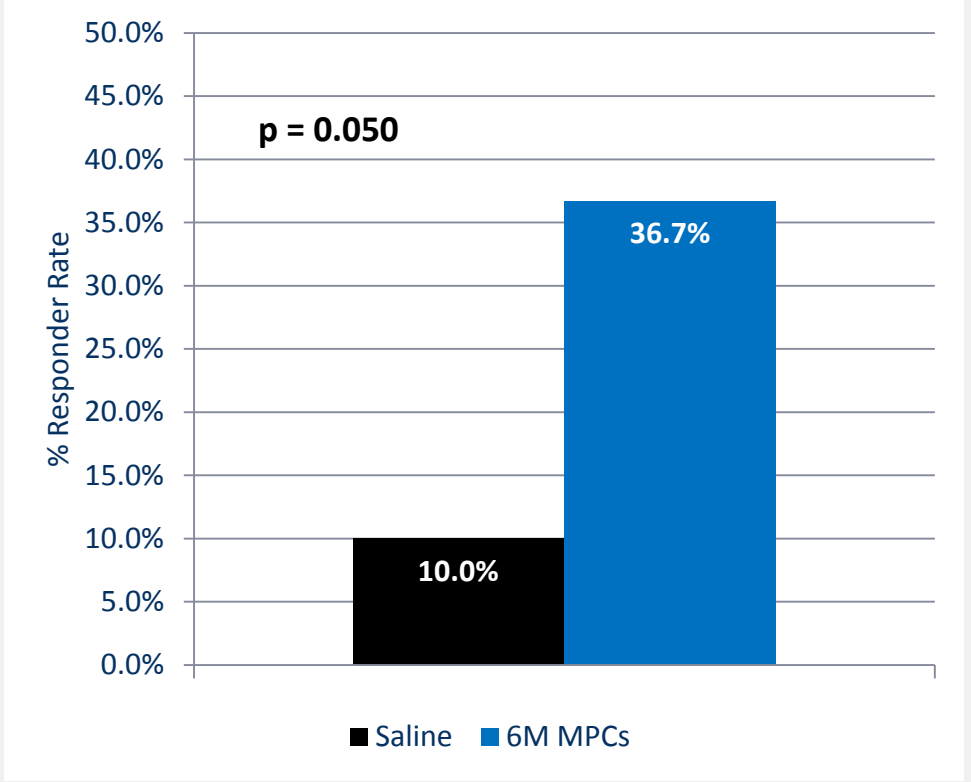
Chronic Low Back Pain

MPC-06-ID – Post-Hoc Phase 2 results provide target endpoints for Phase 3 trial

A: Phase 2: Treatment Success Responders[1,2] at 12 Months



B: Phase 2: Treatment Success Responders[1,2] at both 12 & 24 Months



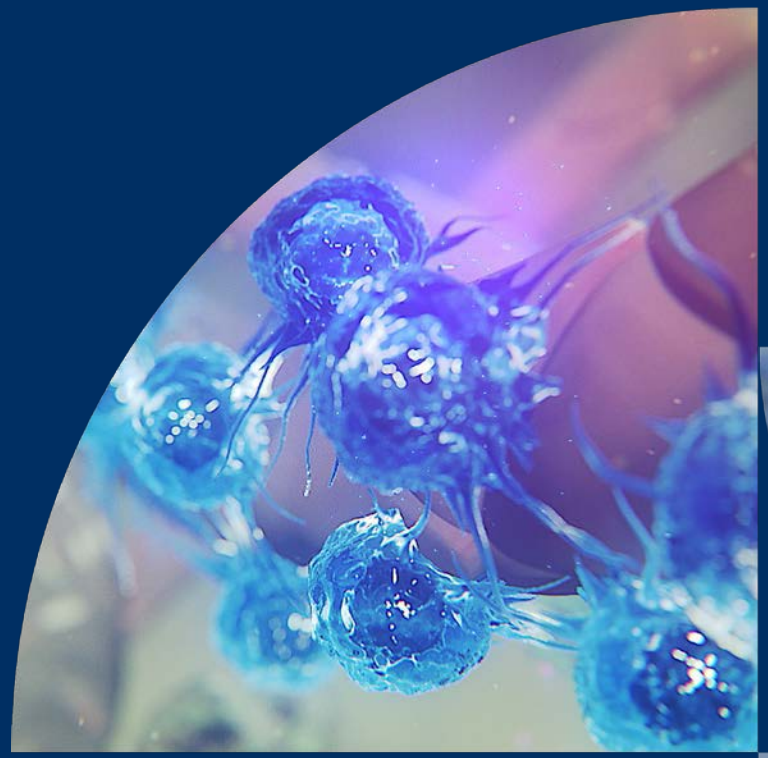
1. Subjects with missing data are classified as non-responders.
2. Treatment Success Responders have a 50% reduction in LBP as measured by VAS AND a 15 point improvement in function as measured by ODI at a) 12 months, and b) both 12 and 24 months and no intervention through 24 months.

Chronic Low Back Pain

MPC-06-ID – Ongoing Phase 3 Clinical Trial

- Three-arm study comparing 6-million MPC with or without hyaluronic acid (HA) against saline control
- Primary efficacy endpoint agreed to with FDA:
  - Overall Treatment Success Composite at both 12 and 24 months as measured by:
    - At least 50% reduction from baseline in Visual Analogue Scale (VAS) pain score at both 12 and 24 months post-treatment; and
    - At least a 15 point decrease from baseline in Oswestry Disability Index (ODI) function score at both 12 and 24 months post-treatment; and
    - No interventions affecting the treated disc through 24 months
- Study powered to show efficacy for both 6-million MPC arms (with and without HA)

404 patient 2:1 randomized Phase 3 trial completed enrollment March 2018; all patients have completed 12 month safety and efficacy follow-up



mesoblast