

sequanamedical



Pioneers in the treatment of fluid overload

Transforming lives in
liver disease, heart failure & cancer

Investor presentation – July 2023

Euronext: SEQUA.BR

Disclaimers

Important Notice

IMPORTANT: You must read the following before continuing. The following applies to this document, the oral presentation of the information in this document by Sequana Medical NV (the "Company") or any person on behalf of the Company, and any question-and-answer session that follows the oral presentation:

- This presentation has been prepared by the management of the Company. It does not constitute or form part of, and should not be construed as, an offer, solicitation or invitation to subscribe for, underwrite or otherwise acquire, any securities of the Company or any member of its group nor should it or any part of it form the basis of, or be relied on in connection with, any contract to purchase or subscribe for any securities of the Company or any member of its group, nor shall it or any part of it form the basis of or be relied on in connection with any contract or commitment whatsoever. Prospective investors are required to make their own independent investigations and appraisals of the business and financial condition of the Company and the nature of its securities before taking any investment decision with respect to securities of the Company. This presentation is not a prospectus or offering memorandum.
- The information included in this presentation has been provided to you solely for your information and background and is subject to updating, completion, revision and amendment and such information may change materially. No person is under any obligation or undertaking to update or keep current the information contained in this presentation and any opinions expressed in relation thereto are subject to change without notice. No representation or warranty, express or implied, is made as to the fairness, accuracy, reasonableness or completeness of the information contained herein. Neither the Company nor any other person accepts any liability for any loss howsoever arising, directly or indirectly, from this presentation or its contents.
- The presentation also contains information from third parties. Third party industry publications, studies and surveys may also contain that the data contained therein have been obtained from sources believed to be reliable, but that there is no guarantee of the accuracy or completeness of such data. While the Company reasonably believes that each of these publications, studies and surveys has been prepared by a reputable source, the Company, or any of their respective parent or subsidiary undertakings or affiliates, or any of their respective directors, officers, employees, advisers or agents have independently verified the data contained therein. Thus, while the information from third parties has been accurately reproduced with no omissions that would render it misleading, and the Company believes it to be reliable, the Company cannot guarantee its accuracy or completeness. In addition, certain of the industry and market data contained in this presentation comes from the Company's own internal research and estimates based on the knowledge and experience of the Company's management in the market in which the Company operates. While the Company reasonably believes that such research and estimates are reasonable and reliable, they, and their underlying methodology and assumptions, have not been verified by any independent source for accuracy or completeness and are subject to change without notice. Accordingly, undue reliance should not be placed on any of the industry, market or competitive position data contained in this presentation.
- This presentation includes forward-looking statements that reflect the Company's intentions, beliefs or current expectations concerning, among other things, the Company's results, condition, performance, prospects, growth, strategies and the industry in which the Company operates. These forward-looking statements are subject to risks, uncertainties and assumptions and other factors that could cause the Company's actual results, condition, performance, prospects, growth or opportunities, as well as those of the markets it serves or intends to serve, to differ materially from those expressed in, or suggested by, these forward-looking statements. These statements may include, without limitation, any statements preceded by, followed by or including words such as "target," "believe," "expect," "aim," "intend," "may," "anticipate," "estimate," "plan," "project," "will," "can have," "likely," "should," "would," "could" and other words and terms of similar meaning or the negative thereof. The Company cautions you that forward-looking statements are not guarantees of future performance and that its actual results and condition and the development of the industry in which the Company operates may differ materially from those made in or suggested by the forward-looking statements contained in this presentation. In addition, even if the Company's results, condition, and growth and the development of the industry in which the Company operates are consistent with the forward-looking statements contained in this presentation, those results or developments may not be indicative of results or developments in future periods. The Company and each of its directors, officers and employees expressly disclaim any obligation or undertaking to review, update or release any update of or revisions to any forward-looking statements in this presentation or any change in the Company's expectations or any change in events, conditions or circumstances on which these forward-looking statements are based, except as required by applicable law or regulation.
- This document and any materials distributed in connection with this document are not directed to, or intended for distribution to or use by, any person or entity that is a citizen or resident of, or located in, any locality, state, country or other jurisdiction where such distribution, publication, availability or use would be contrary to law or regulation or which would require any registration or licensing within such jurisdiction. The distribution of this document in certain jurisdictions may be restricted by law and persons into whose possession this document comes should inform themselves about, and observe any such restrictions.
- The Company's securities have not been and will not be registered under the US Securities Act of 1933, as amended (the "Securities Act"), and may not be offered or sold in the United States absent registration under the Securities Act or exemption from the registration requirement thereof.
- By attending the meeting where this presentation is presented or by accepting a copy of it, you agree to be bound by the foregoing limitations.

Regulatory disclaimer:

- The **alfapump**[®] system has not yet received regulatory approval in the United States and Canada. Any statement in this presentation about safety and efficacy of the **alfapump**[®] system does not apply to the United States and Canada. In the United States and Canada, the **alfapump**[®] system is currently under clinical investigation (POSEIDON Study) and is being studied in adult patients with refractory or recurrent ascites due to liver cirrhosis.
- DSR[®] therapy is still under development and it should be noted that any statements regarding safety and efficacy arise from ongoing pre-clinical and clinical investigations which have yet to be completed. There is no link between DSR[®] therapy and ongoing investigations with the **alfapump**[®] system in Europe, the United States or Canada.

General disclaimer:

- Sequana Medical is closely following the evolution of macroeconomic conditions, the geopolitical situation in Ukraine and the COVID-19 global health crisis and is in constant dialogue with its partners to assess the impact and adapt operations accordingly.
- Sequana Medical has put in place mitigation plans to minimise delays. The impact of increased demands on the healthcare systems, limitations on non-essential hospital visits and procedures, social-distancing and travel restrictions may result in further delays to execution of clinical studies and impact sales.
- Sequana Medical will continue to update the market as needed and whenever possible.

Note:

- **alfapump**[®] and DSR[®] are registered trademarks.

Fluid overload – large markets with strong growth

Diuretic-resistance is common and current treatment options are extremely limited



alfapump in liver disease

- Market growing to over \$2.5 billion by 2035⁽¹⁾
- FDA breakthrough device / Approved in EU
- Successful North American POSEIDON pivotal study – primary endpoints met, strong clinical profile
- PMA filing planned for Q4 '23 with FDA approval anticipated in H2 '24
- Direct sales in US
- Strong reimbursement profile – existing DRGs, NTAP and TCET opportunity



DSR in heart failure

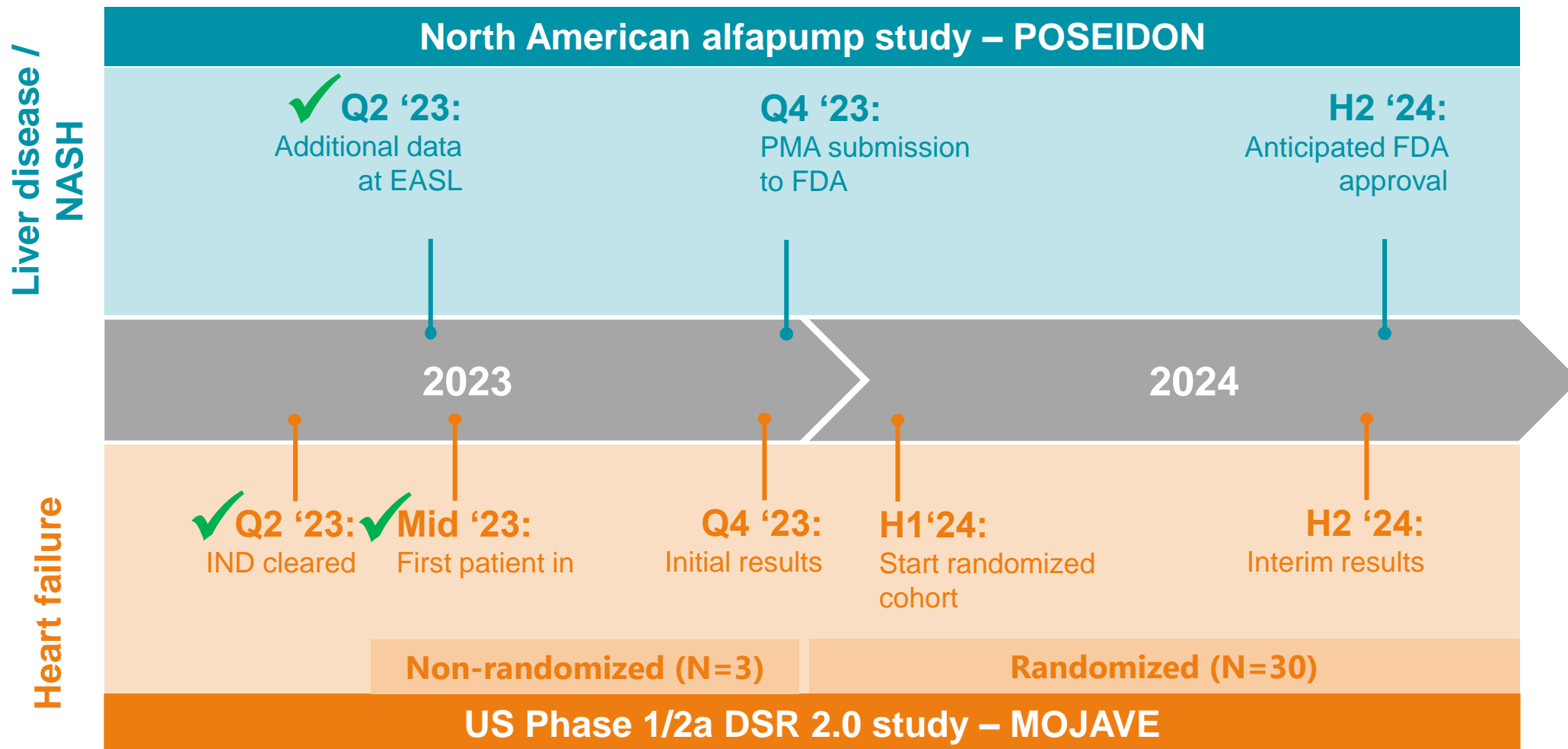
- Multi-billion market opportunity
- Clinical proof-of-concept as disease-modifying heart failure drug therapy
- Transitioning to DSR 2.0; low development risk, improved profile & strong IP
- US Ph. 1/2a randomized controlled study (MOJAVE) started; initial data planned for Q4 '23
- Partnering based on MOJAVE readout in '25

Growth in liver cirrhosis due to NASH and breakthrough DSR innovation drives tremendous commercial opportunity for Sequana Medical

Source 1: Based on US and Canada market assessment conducted by highly experienced international consulting group, estimating over 170,000 patients with recurrent or refractory ascites in North America by 2035, with estimated incidence of 60% and based on \$25K for price of **alfapump**

PMA: Pre-Market Approval; **DRG:** Diagnosis Related Group (hospital payment code); **NTAP:** New Technology Add-on Payment; **TCET:** Transitional Coverage of Emerging Technologies

Strong outlook for key value drivers





alfapump[®]

Proven step change in the treatment of liver
refractory ascites



sequanamedical



Refractory ascites – key complication of liver cirrhosis

Fatty liver disease / NASH is driving dramatic growth and change in attitudes to liver cirrhosis patients



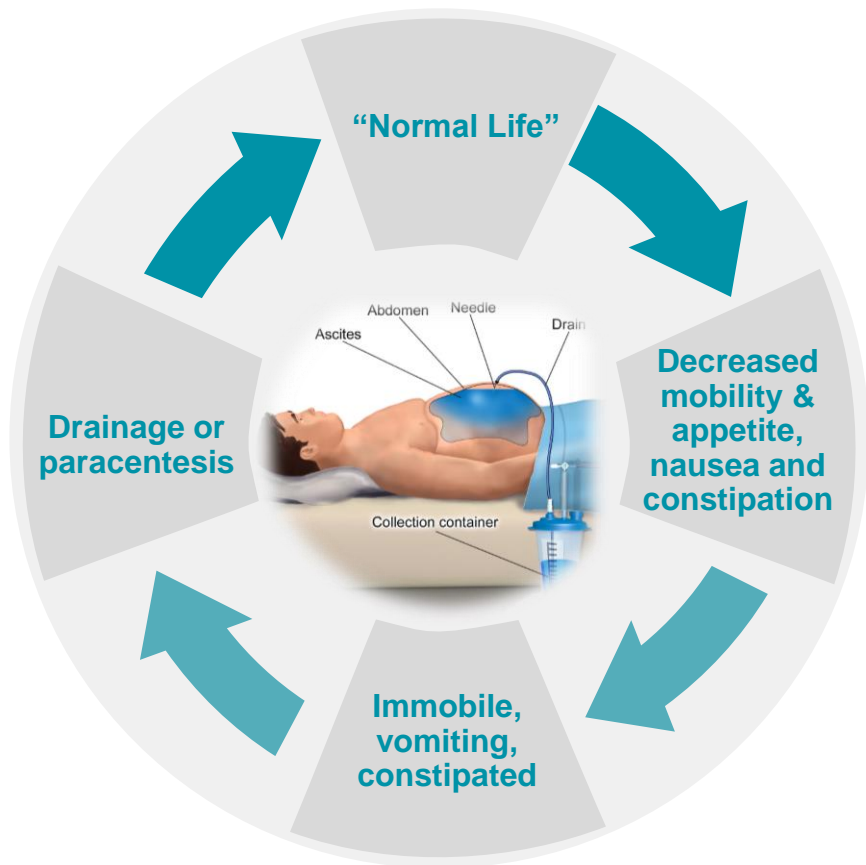


Clear limitations of existing treatment options

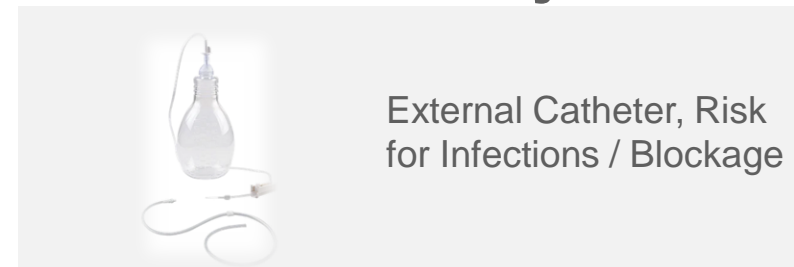
Little innovation or new development – transplant is a partner not competitor

Paracentesis (LVP / drainage)

Painful, burdensome, short term benefit, QoL impact



Permanent Catheter System



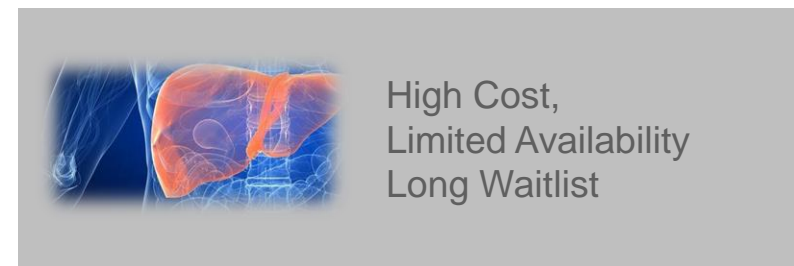
External Catheter, Risk for Infections / Blockage

TIPS



Complications, Contraindications

Liver transplantation



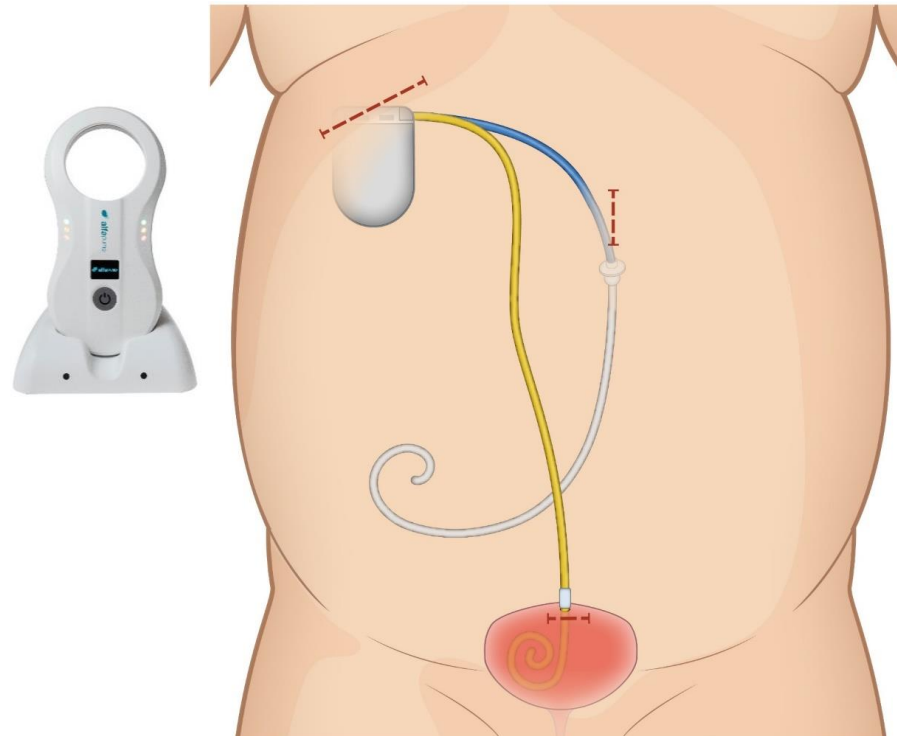
High Cost, Limited Availability Long Waitlist



alfapump – continuous ascites removal to the bladder

Fully implanted automatic device for long term implantation

- ✓ Wireless battery charging
- ✓ Settings wirelessly adjusted
- ✓ Remote data monitoring
- ✓ Moves up to 4 litres / day



Breakthrough Device Designation

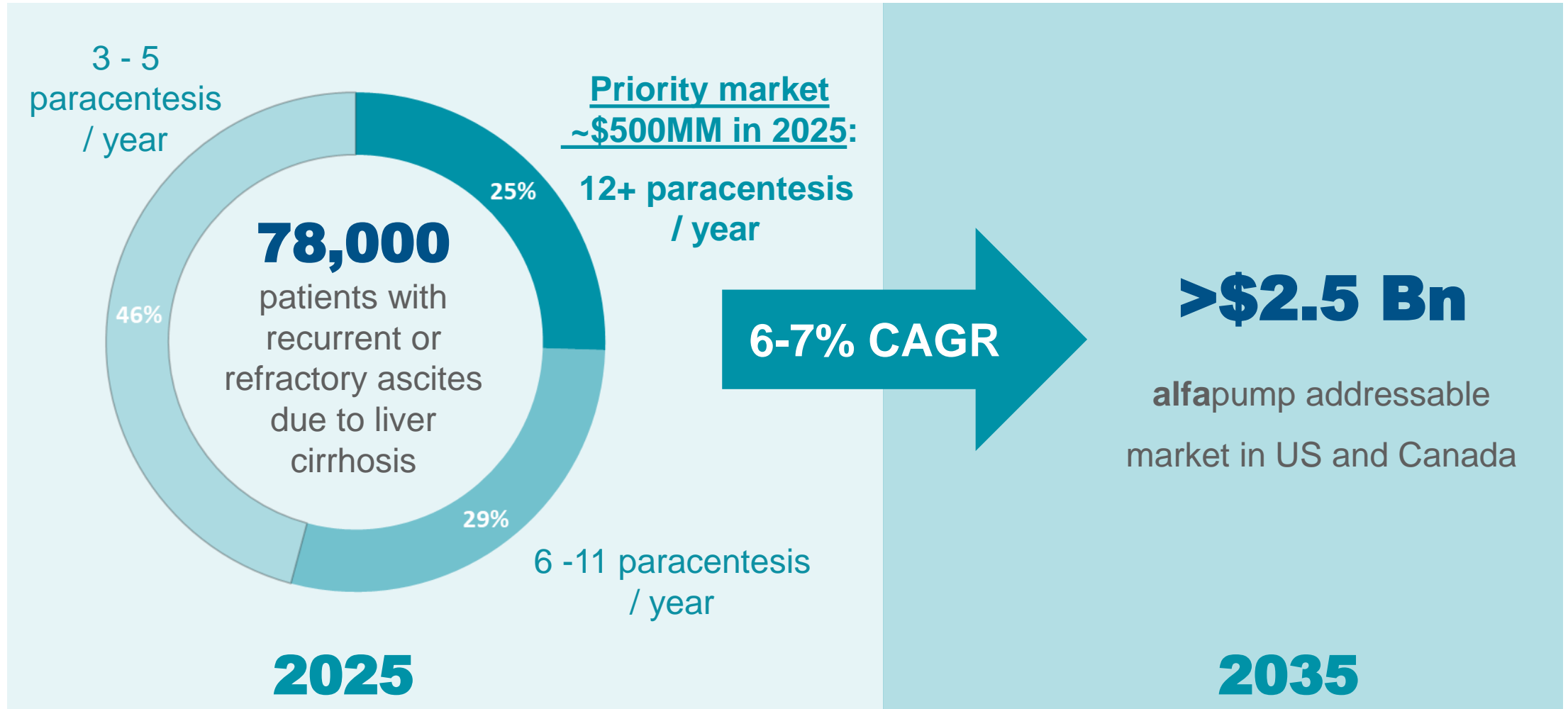


Over 1,000 systems implanted
Strong IP barriers through extensive patent portfolio & know-how



Large and strongly growing North American market

NASH is forecast to drive significant growth for many years – and is changing attitudes to cirrhosis



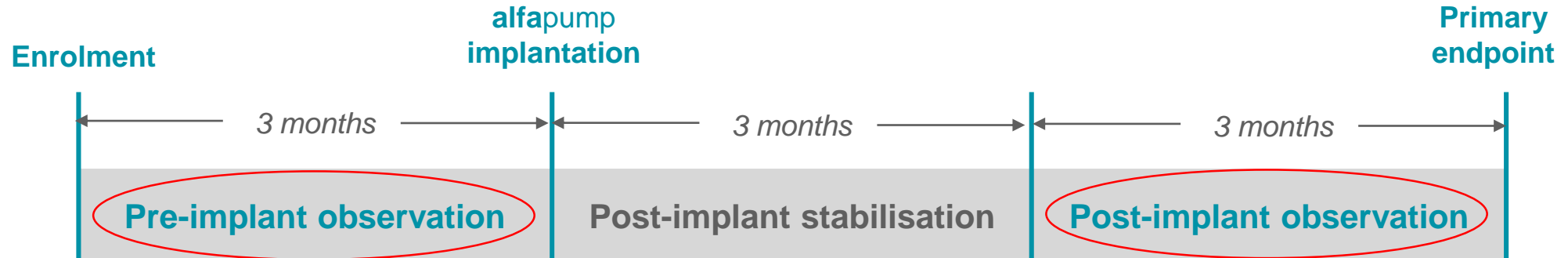
Sources: Based on US and Canada market assessment by international consulting group, using claims analysis for commercial and CMS (Center for Medicare and Medicaid Services) patients requiring paracentesis procedure with liver disease diagnosis codes; Medicare Inpatient & Outpatient Hospital Standard Analytical Files 2019.CMS, Baltimore, MD. www.cms.hhs.gov; using incidence rate of 60% and alfapump price of \$25K

CAGR: Compound Annual Growth Rate



POSEIDON – Successful North American pivotal study

Pivotal Cohort of 40 patients with recurrent or refractory ascites due to liver cirrhosis



Primary effectiveness endpoints exceed predefined thresholds for study success

- **100%** median per-patient reduction in therapeutic paracentesis ($p < 0.001$)* *vs at least 50%*
- **77% of patients** with at least 50% reduction in therapeutic paracentesis ($p < 0.001$)* *vs at least 50%*

Primary safety endpoint data in line with expectations

- No unanticipated adverse device effects
- 6 primary safety events

PMA filing planned for Q4 2023 / FDA approval anticipated in H2 2024

* Post vs Pre-implant observation period

Note: Secondary endpoints on long-term follow-up of patients, up to 24 months post-implant



POSEIDON – strong clinical profile of alfapump

Primary and key secondary endpoints presented by Prof. Wong, PI, at leading international liver congress

- ✓ **Effective in control of ascites, “virtually eliminating needle paracentesis”**
- ✓ **NASH is already a key driver of decompensated cirrhosis**
- ✓ **Safety in line with expectations**
 - Six pumps were explanted: three due to skin erosion & three due to moderate bladder discomfort
 - Despite disease progression:
 - Similar number of Major Adverse Events (MAEs) in pre- and post-implant period
 - Comparable number of serious infections in pre- and post-implant period
 - Stable kidney function over long-term follow-up
- ✓ **Clinically meaningful and statistically significant improvement in quality of life***
- ✓ **One-year survival probability of 70%, comparing favorably to literature citing 50%⁽¹⁾**

* At six months post-implantation compared to baseline

Source 1: Biggins et al., *Hepatology*, Vol. 74, No. 2, 2021, AASLD Practice Guidance; Moreau R et al., *Liver International* 2004; 24: 457-464; Note: POSEIDON study not powered for survival



Attractive pricing with derisked reimbursement

Existing DRG payment and breakthrough device designation de-risk reimbursement of alfapump

Coding – Strong existing position with potential for further upside

- Existing hospital DRG payment for **alfapump** procedure supports **alfapump** price of **at least \$25K** (gross margin of over 75%)
- US DRG payments of \$60-70K in target hospitals*
- Potential for higher payments via NTAP
- Physician CPT III coding process underway

Coverage – Breakthrough designation brings clear benefits

- Proposed TCET provides automatic coverage for 4 years with pathway to permanent coverage

Medicare will be dominant payer
Additional potential from Veterans Affairs

*On the basis of existing ICD-10 codes issued for the **alfapump**, the likely DRG coding will be 423 “OTHER HEPATOBILIARY OR PANCREAS O.R. PROCEDURES”, payments adjusted with Medicare inflation rates to 2025

DRG: Diagnosis Related Group; **NTAP:** New Technology Add-On Payment; **CPT:** Current Procedural Terminology; **TCET:** Transitional Coverage of Emerging Technologies



US – Go direct to 90 liver transplant centers

Highly efficient approach to target doctors and patients – driven by treatment guidelines



Cover 95% of liver transplants



~50 person commercial team

DSR[®]

Disease-modifying heart failure drug therapy

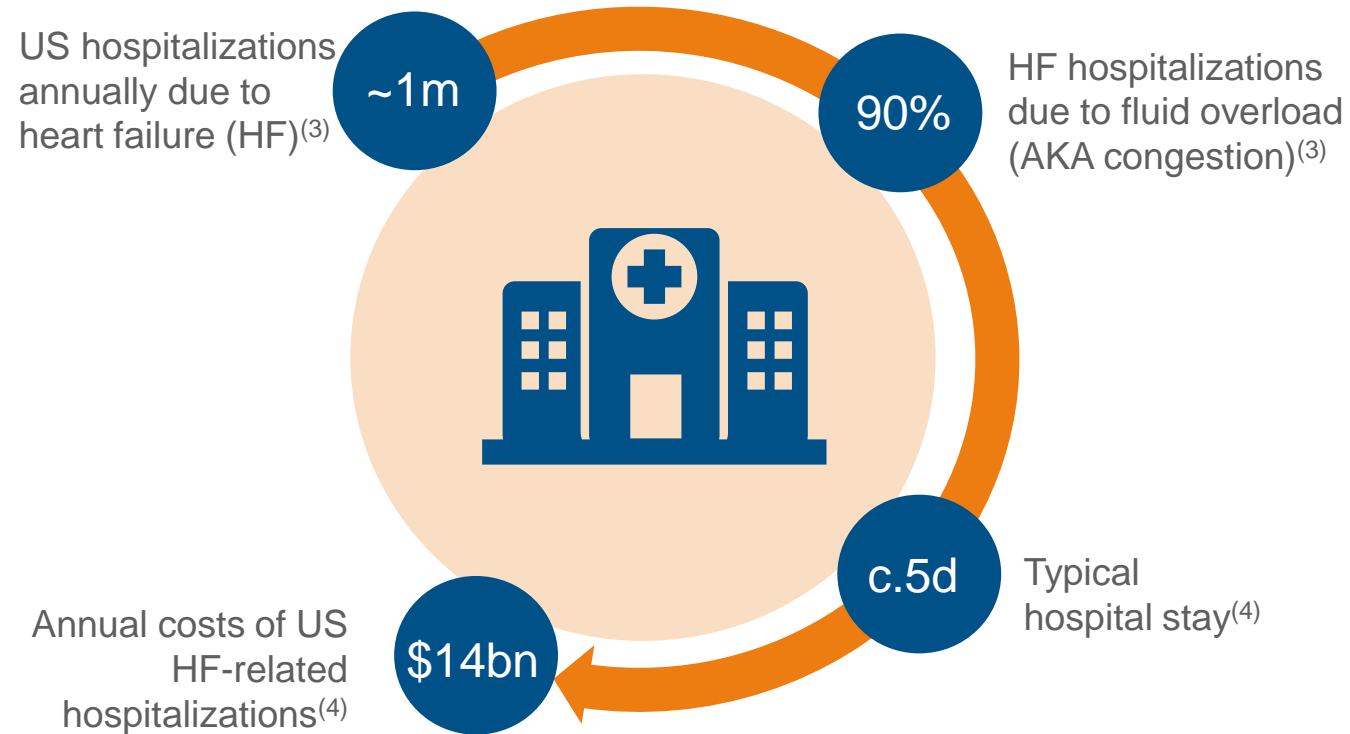


sequanamedical



Congestion is key driver of morbidity & hospitalization

Diuretic-resistance in heart failure is common and there are few effective clinical alternatives

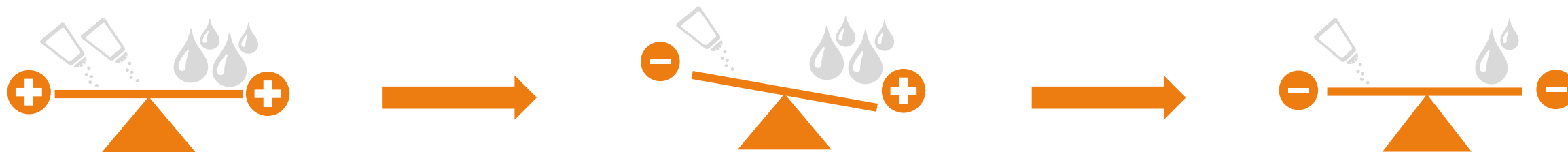


- 40% of heart failure patients on IV loop diuretics have a poor response⁽¹⁾
- 24% re-admission rate at 30 days⁽²⁾



DSR (Direct Sodium Removal) – targets the key cause

Eliminating fluid spread across the body – working in partnership with the kidneys

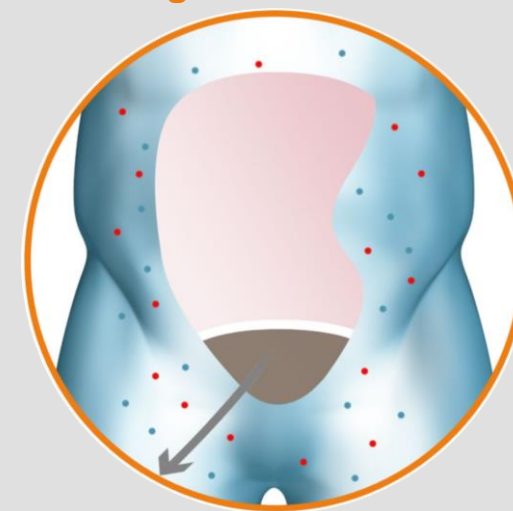
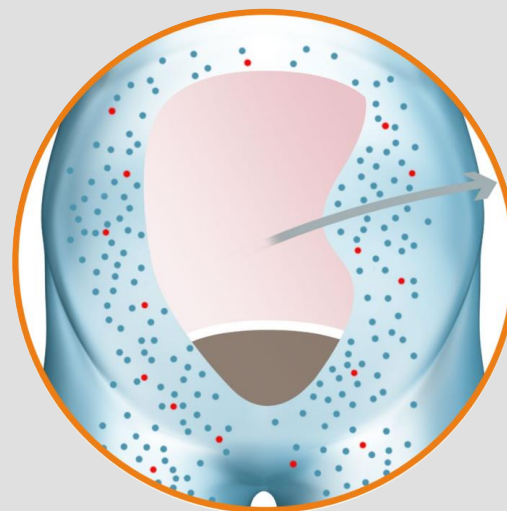
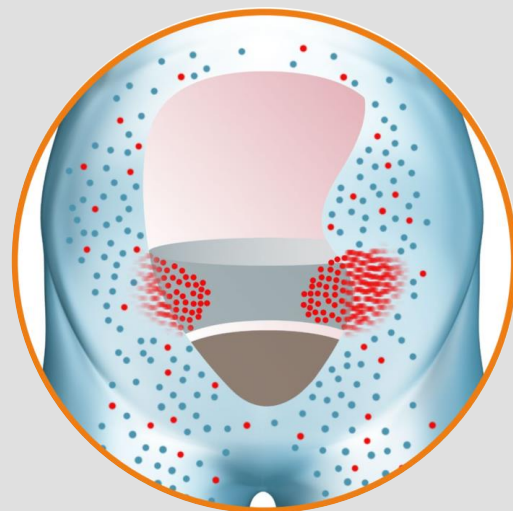
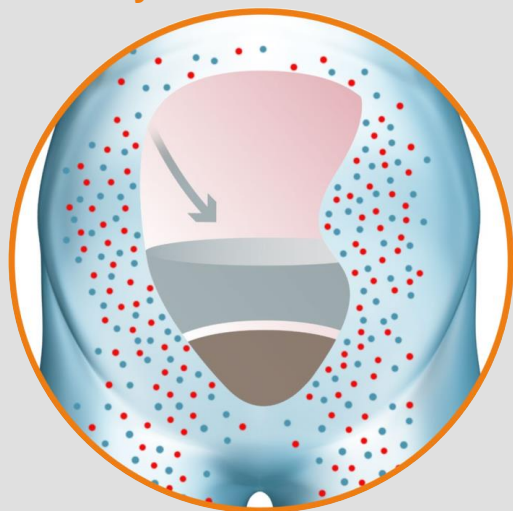


1 Sodium-free DSR product administered to peritoneal cavity

2 Sodium diffuses from body into DSR product

3 DSR product + extracted sodium removed from body

4 Body eliminates free water to restore sodium balance, reducing the fluid overload



- water
- sodium

Fundamental patents to reduce fluid overload in heart failure patients granted in US, Europe & China



Disease-modifying heart failure drug therapy

RED DESERT and SAHARA deliver clinical proof-of-concept with long-lasting clinical benefits

Effective decongestion and durable improvements in cardio-renal health

- ✓ Safe, effective and rapid elimination of fluid overload / restoring euvolemia
- ✓ Considerable benefit in eGFR and NT-proBNP
- ✓ Dramatic and sustained improvement in diuretic response

Leading to improved clinical outcomes

- ✓ No congestion-related heart failure re-hospitalizations
- ✓ One class improvement of NYHA status
- ✓ Over 75% reduction in predicted one-year mortality*

“These results are highly encouraging and indicate the potential for DSR therapy to deliver clinically meaningful decongestion and durable improvements in cardio-renal function and thus diuretic response” –

Dr. Testani, Yale

* Based on Seattle Heart Failure Model

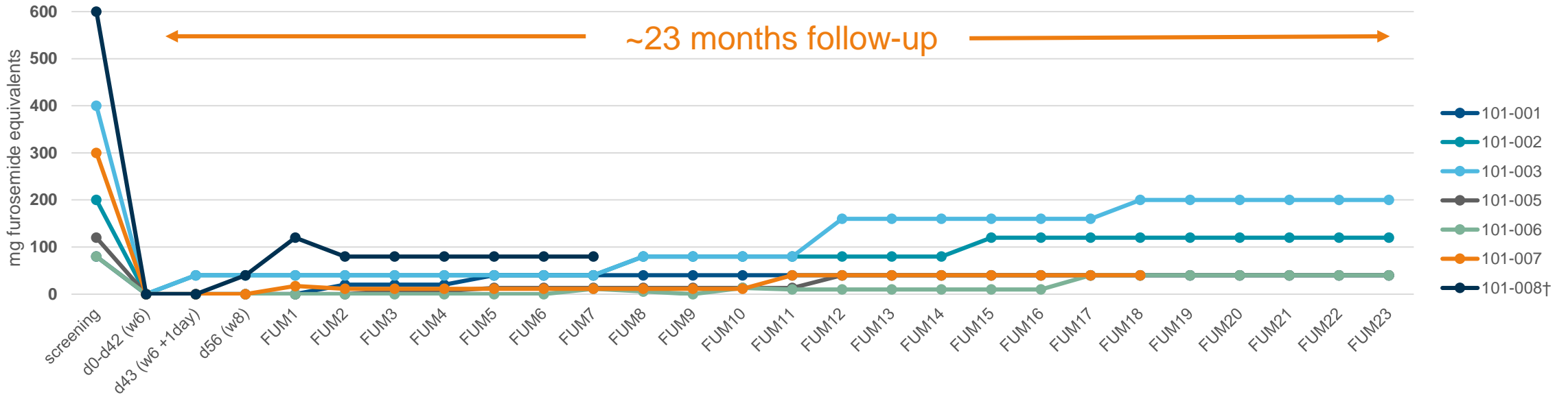
NYHA: New York Heart Association classification, data collected outside study protocols of RED DESERT and SAHARA



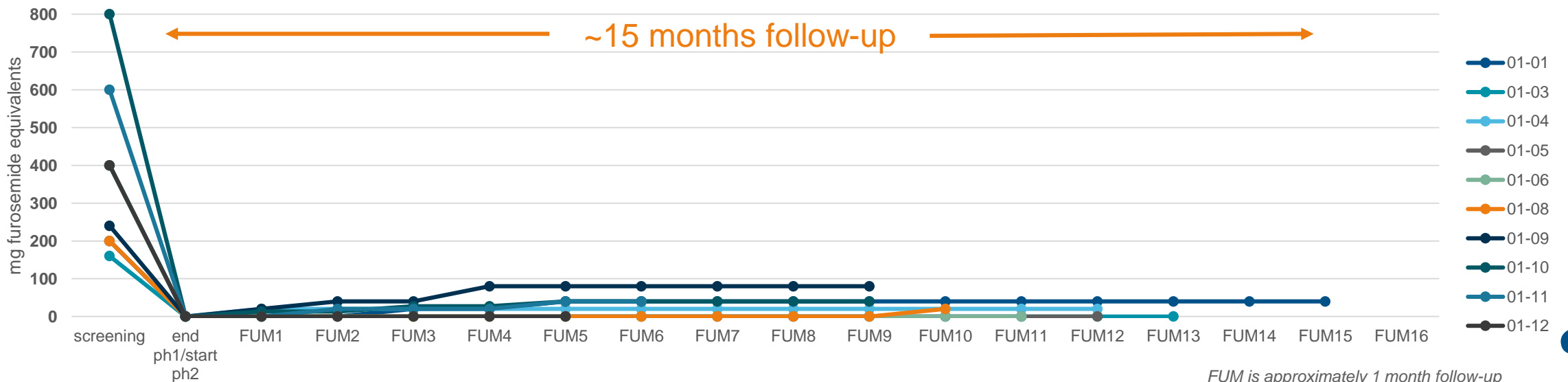
Long-term improvement in cardio-renal status

Durable and dramatic reduction in oral loop diuretic dosing as a result of improved disease status

RED DESERT



SAHARA



FUM is approximately 1 month follow-up



DSR 2.0 improves therapeutic and safety profile

Strong granted IP drives high margin recurring revenue stream

DSR 1.0

Sodium-free D10% (off-the-shelf)

- ✓ Clinical proof-of-concept
- ✓ Rapid clinical path
- ~ Therapeutic profile / Ease of use
- ~ Safety profile

✓ RED DESERT ✓ SAHARA



DSR 2.0

Sodium-free dextrose / icodextrin (proprietary)

- ✓ Improved therapeutic profile
- ✓ Favorable safety profile
- ✓ Strong granted IP position in US & Europe
 - “Low or no sodium drug for the treatment of heart failure”
 - Drives recurring revenue from high gross margin consumable

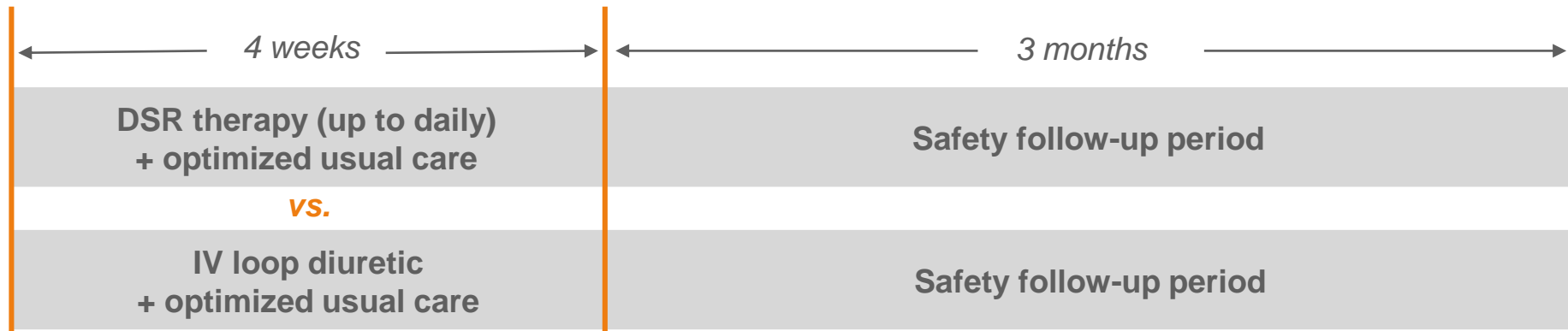
✓ CHIHUAHUA – MOJAVE





MOJAVE – Phase 1/2a randomized controlled US study

Seeking to replicate SAHARA outcomes in US study of heart failure patients with persistent congestion

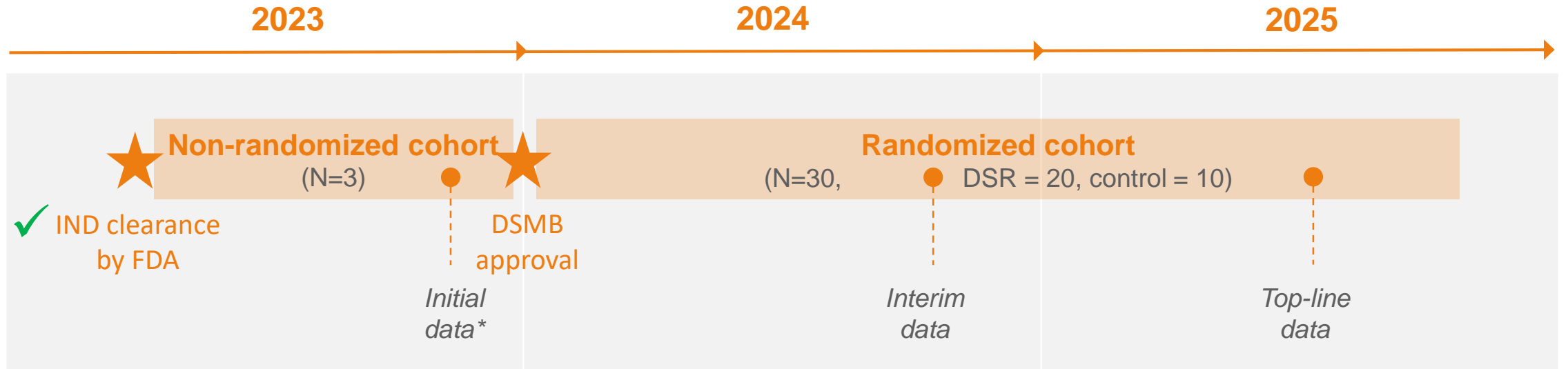


Endpoints

- **Safety:** rate of adverse and serious adverse events
- **Efficacy:** improvement in diuretic response (6-hour urine sodium output)
- **Exploratory:** change in weight (volume status), creatinine (renal function), natriuretic peptides (heart function), NYHA functional class, number of HF-related re-hospitalizations



MOJAVE – initial data expected in Q4 2023



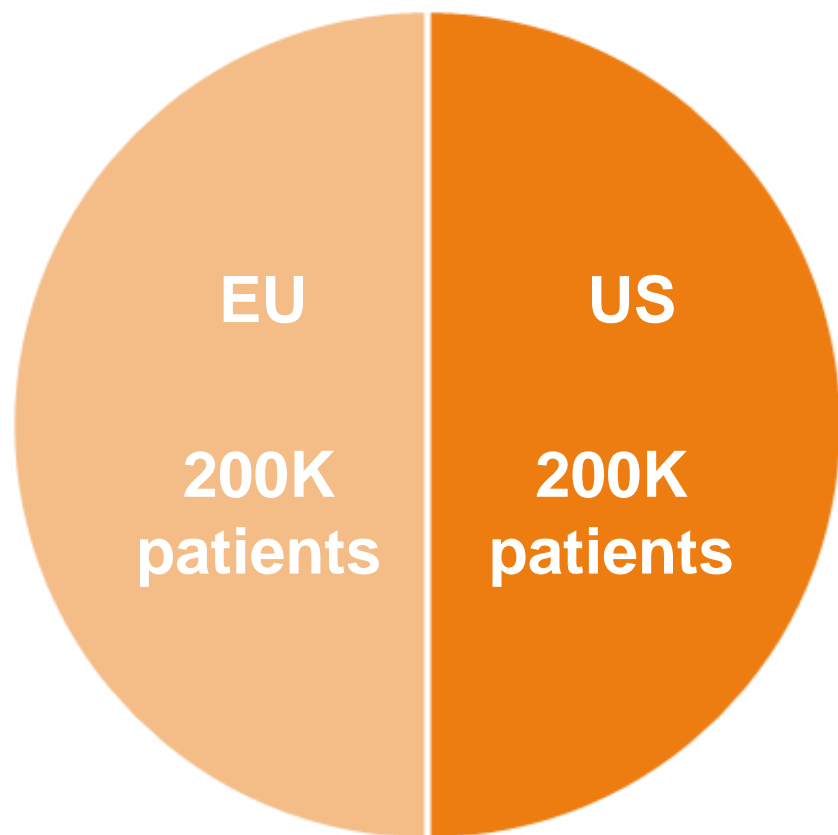
Top-line data in mid 2025 intended to deliver the clinical data package for partnering

* Data from three patients in non-randomized cohort



Multi-billion commercial opportunity

~400K chronically congested HF patients hospitalized per year in the US and EU (“frequent flyers”)



Potential for premium DSR pricing through reduced hospitalization and improved survival

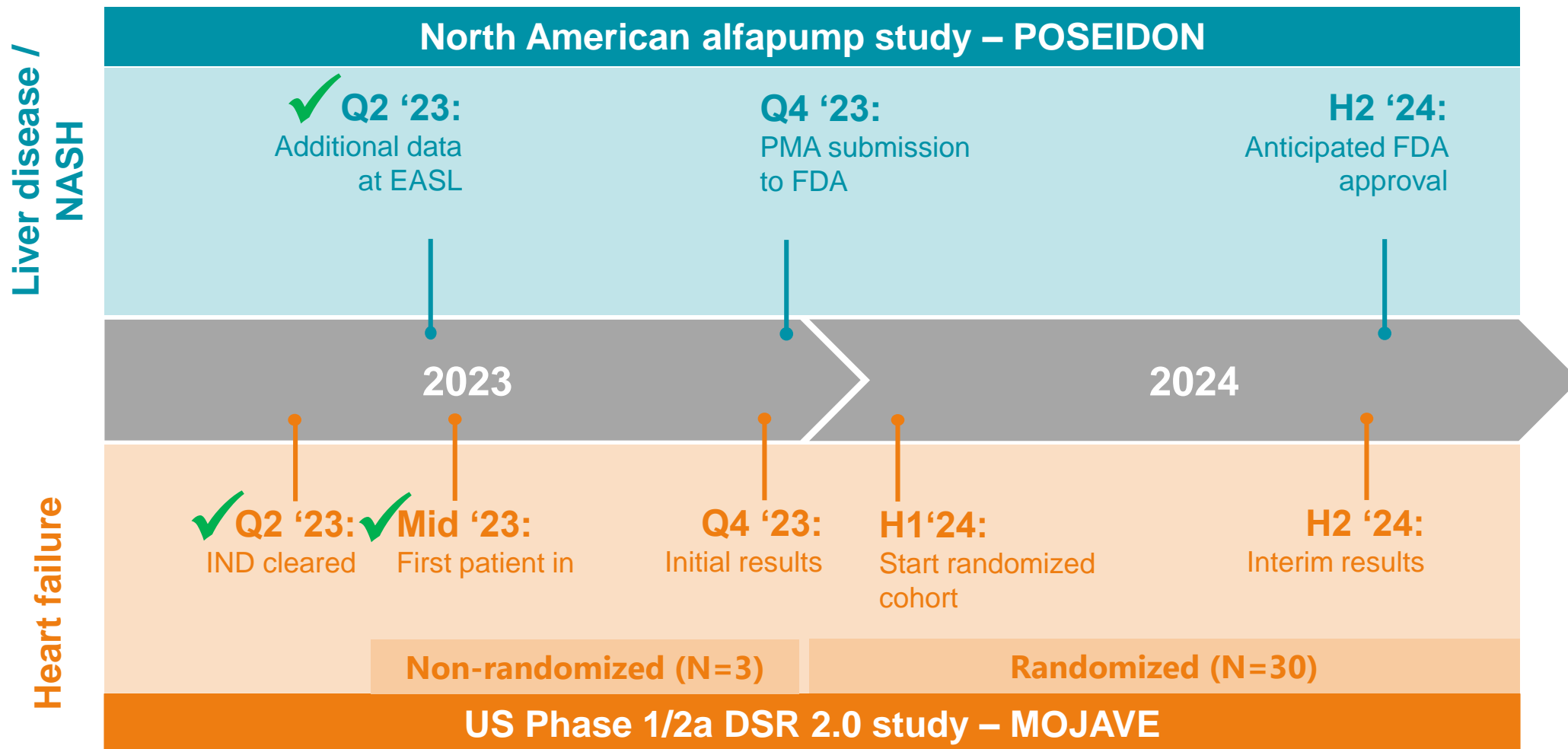


Outlook

Strong near term value drivers with clear
long term potential

sequanamedical

Strong outlook for key value drivers



Leader in large and growing markets with unmet needs



alfapump® in liver disease – market potential growing to over \$2.5 billion by 2035⁽¹⁾

- NASH is changing liver cirrhosis market and driving strong growth
- Approved in EU / FDA breakthrough device status / Strong IP portfolio
- North American pivotal study – reported strong primary and key secondary endpoint data
- FDA approval expected in 2024 / Go direct to liver transplant centers / derisked reimbursement



DSR® in heart failure – multi-billion market opportunity in EU and US

- Clinical proof-of-concept as disease-modifying heart failure drug with DSR 1.0
- Transitioning to proprietary DSR 2.0 – low development risk, improved profile & strong IP
- MOJAVE US randomized controlled Ph. 1/2a started – initial data planned for Q4' 23
- Partner based on MOJAVE top-line data in '25

Contact info

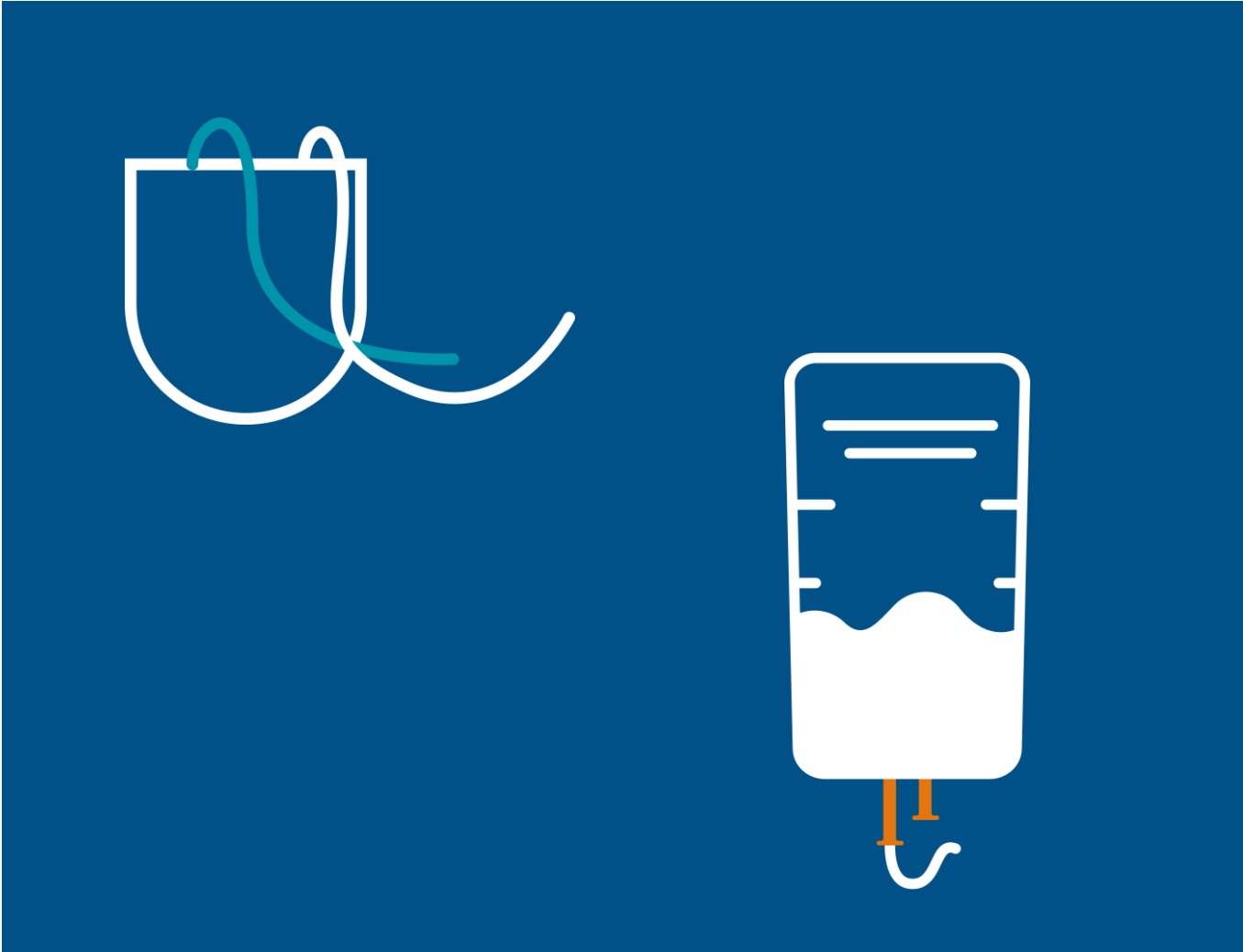
IR@sequanamedical.com

+32 498 053579

www.sequanamedical.com

sequanamedical

sequanamedical



Back-up

Sequana Medical NV

- Founded in 2006
- Gent, Belgium (HQ): corporate, clinical, commercial
- Zurich, Switzerland: manufacturing, engineering, QA/RA
- ~60 employees
- Euronext Brussels: SEQUA



Strong organisation

Highly experienced leadership team supported by committed and well-reputed shareholders

Executive team:



Ian Crosbie
Chief Executive Officer



Kirsten Van Bockstaele
Chief Financial Officer



Oliver Gødje
Chief Medical Officer



Dragomir Lakic
VP Manufacturing



Gijs Klarenbeek
Senior Medical Advisor



Martijn Blom
Chief Commercial Officer



Timur Resch
Global VP QM/QA/RA



Andreas Wirth
VP Engineering

Board of Directors:



Pierre Chauvineau
Board Chairman



Rudy Dekeyser
Director



Wim Ottevaere
Director



Jackie Fielding
Director



Doug Kohrs
Director



Alex Clyde
Director



Kenneth Macleod
Director

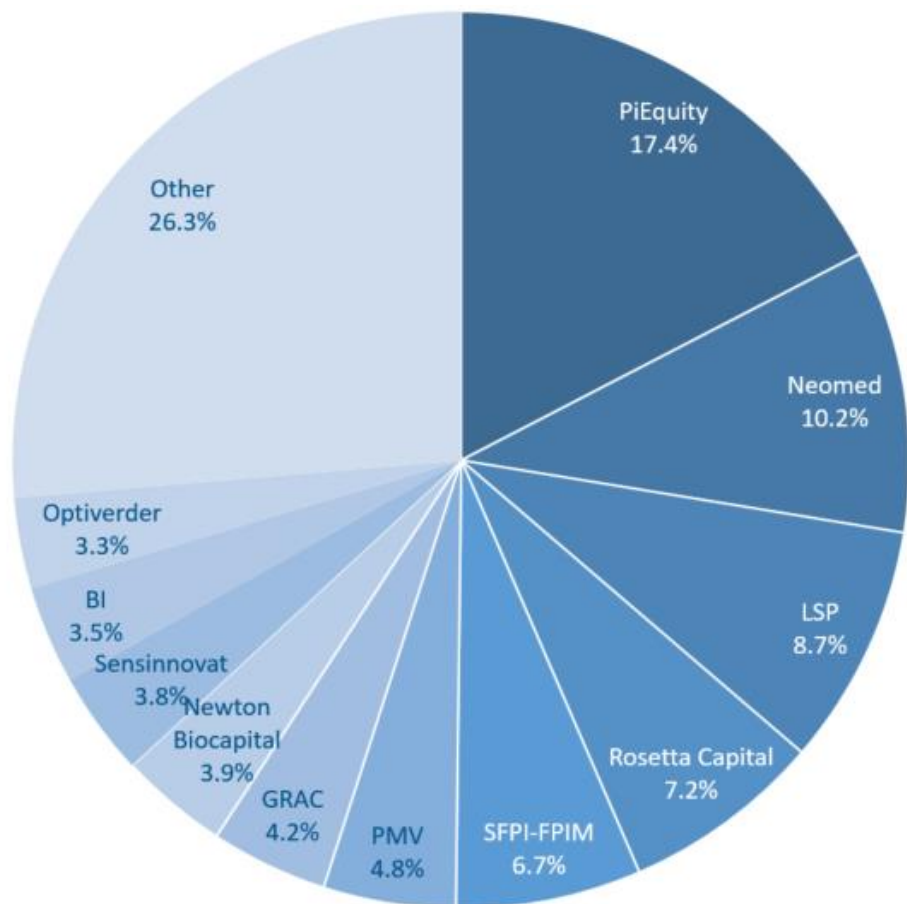


Ian Crosbie
Chief Executive Officer

Shareholders base and financial overview

Ticker: SEQUA – Euronext Brussels

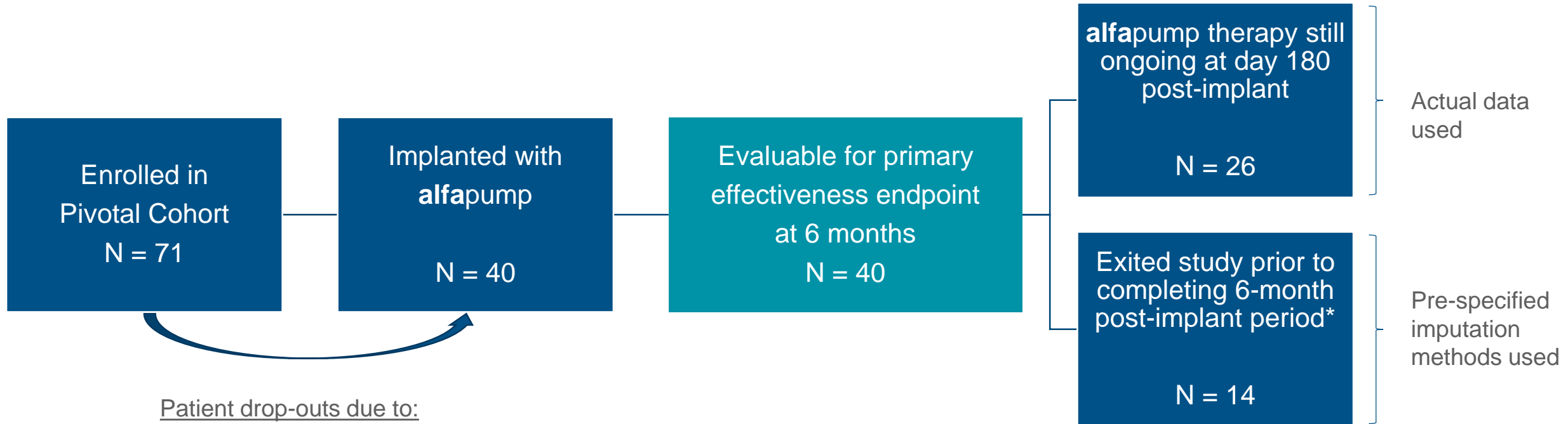
- Outstanding shares: 28.2M
- Outstanding shares corresponding to outstanding share options: 3.9M



- Analysts:
 - Degroof Petercam – Laura Roba
 - Edison – Pooya Hemami
 - H.C. Wainwright – Yi Chen
 - KBC Securities – Jeroen Van den Bossche
 - Van Lanschot Kempen – Suzanne van Voorthuizen
- Cash (31 December 2022): €18.9M
- Cash runway into Q1 2024



POSEIDON: Pivotal cohort



Patient drop-outs due to:

- COVID-19 related delays in elective surgery
- Not meeting inclusion criteria at time of implant decision

* Reasons for exiting study:

- death or withdrawal due to unrelated AE, liver transplant (N=8)
- **alfapump** system, procedure or therapy related AE (N=6)



POSEIDON: Pivotal Data - Patient profile

40 severely decompensated patients – alcohol and NASH as key drivers of cirrhosis

Age (mean)	63.6 ± 9.5 yr
MELD score (mean ± SD)	15.2 ± 3.8
Cirrhosis etiology*	
- Alcohol	- 47.5%
- NASH	- 37.5%
- Viral hepatitis	- 12.5%
- Others	- 11.0%
TP per month prior to study (mean ± SD)	3.2 ± 1.5

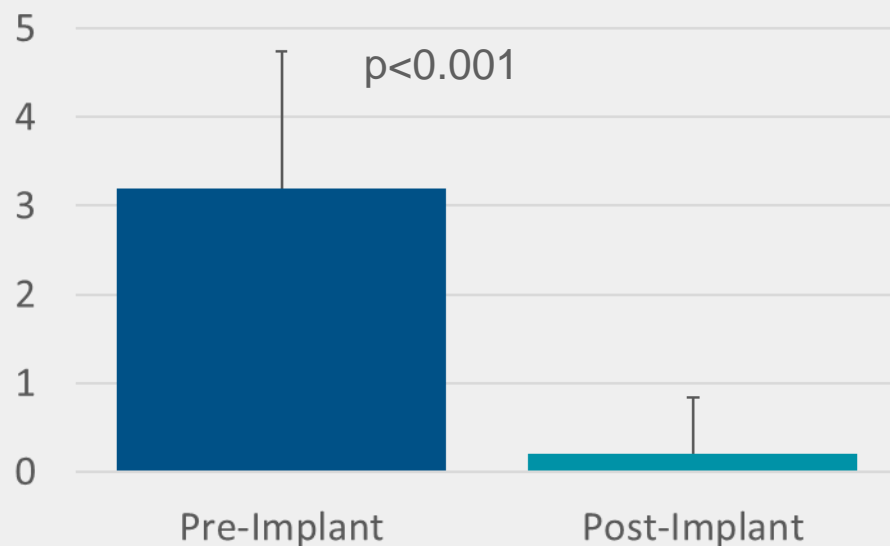
* Some patients may have more than one etiology of cirrhosis



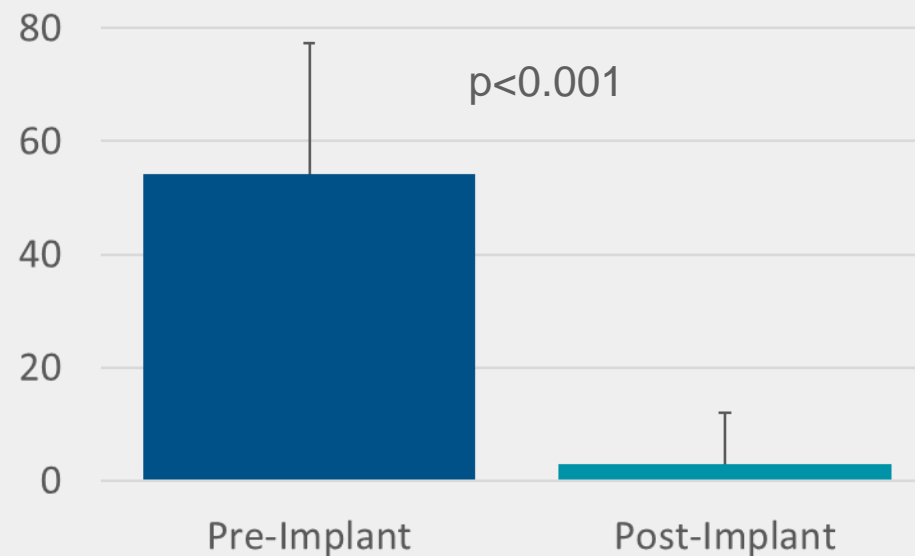
POSEIDON: Primary effectiveness endpoints exceed predefined thresholds for study success*

- **100%** median per-patient reduction in therapeutic paracentesis ($p < 0.001$)**
 - *vs hypothesis of at least a 50% reduction*
- **77% of patients** with at least 50% reduction in therapeutic paracentesis ($p < 0.001$)**
 - *vs hypothesis of at least 50% of patients*

Mean number of paracentesis per month:



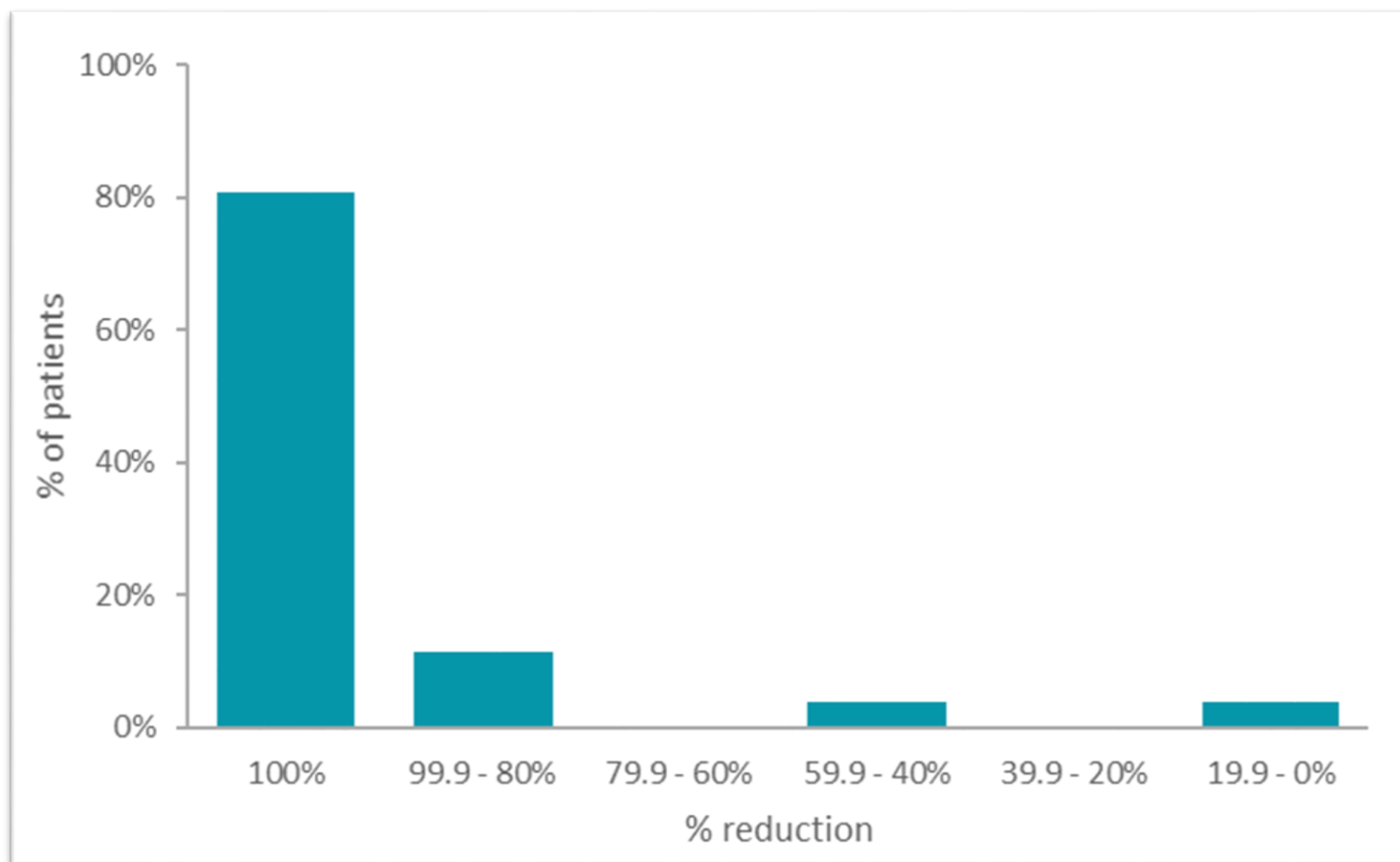
Cumulative ascites (L) drained by paracentesis:





POSEIDON: Observed data from patients completing alfapump therapy through day 180 post-implant*

Distribution of reduction in Therapeutic Paracentesis post-implant vs pre-implant (Pivotal Cohort N = 26)



* These observed patient data are not part of the main primary effectiveness endpoint analysis.



POSEIDON: Primary safety endpoint in line with expectations

Primary safety endpoint (pivotal cohort N = 40):

- Combined rate of i) open surgical re-intervention due to pump system-related AE or to restore pump functionality, ii) pump explant (without replacement) due to pump system-related AE, or iii) pump system-related death from time of pump implant through 6 months post-implantation as adjudicated by the CEC
- No unanticipated adverse device effects
- Six primary safety events – in line with expectations:
 - Wound erosion – **alfapump** explant 3 in 3 patients
 - Patient-reported discomfort – **alfapump** explant 3 in 3 patients → CEC: moderate severity

“The safety data regarding the primary safety endpoint are in line with expectations and reassuring for the potential of the alfapump as a long-term treatment in this patient population”
– Dr. Wong, Principal Investigator POSEIDON



POSEIDON: Similar number of MAEs pre vs post implant

	3 months pre-implant (Day -90 to Day -1)		3 months post-implant (Day 91 to Day 180)	
	No. of events	No. of subjects with events	No. of events	No. of subjects with events
Major Adverse Events	5	3	5	4
AKI > stage 2	0	0	1	1
Hepatorenal Syndrome	0	0	1	1
Hepatic Encephalopathy > stage 2	4	2	1	1
Spontaneous Bacterial Peritonitis	1	1	1	1
Recurrent/Refractory Infection*	0	0	1	1

* Related to paracentesis or the **alfapump** system, procedure or therapy



POSEIDON: Comparable number of serious infections pre vs post implant

	3 months pre-implant (Day -90 to Day -1)		3 months post-implant (Day 91 to Day 180)	
	No. of events	No. of subjects with events	No. of events	No. of subjects with events
All Serious Infections	2	2	3	3
Of which:				
Ascites-Related Serious Infections	1	1	2*	2

* Of which 1 related to the **alfapump** system



Despite AKIs, stable kidney function over long-term

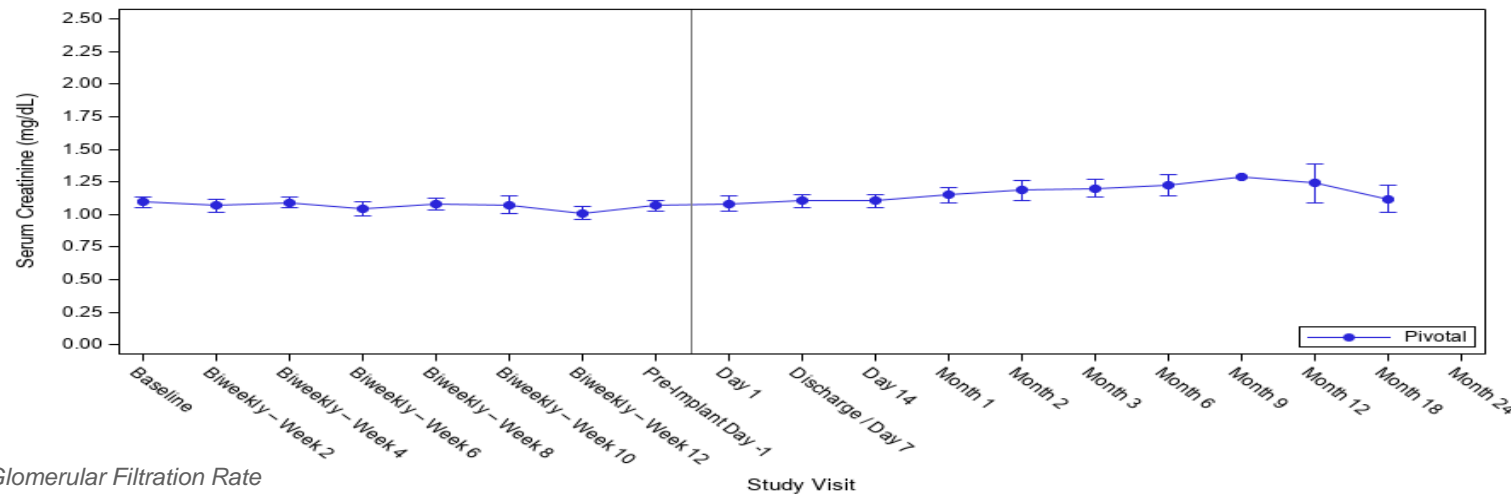
- AKI events post-implant were manageable

	6 months post-implant (Day 0 to Day 180)	
	No. of events	No. of subjects with events
AKI stage 1	16	14
AKI stage 2	4	4
AKI stage 3	2	2

AKI 1 of limited clinical relevance

AKI 2 and 3: three events resolved and three events were unresolved at the time of death from unrelated cause

- Average serum creatinine (and eGFR) remained stable over time:





POSEIDON: QoL assessment

Two validated QoL methodologies are part of secondary endpoints

- SF-36:
 - General health-survey questionnaire
 - Endpoint: improvement* in SF-36 Physical Component Score
 - Subdomains of Physical Component Score: physical functioning, role physical, bodily pain, general health
- Ascites Q:
 - Specific health-survey questionnaire for ascites
 - Endpoint: improvement* in Ascites-Q Score
 - Subdomains of Ascites-Q: abdominal fullness, lack of appetite, early satiety, nausea, abdominal pain, back pain, short of breath

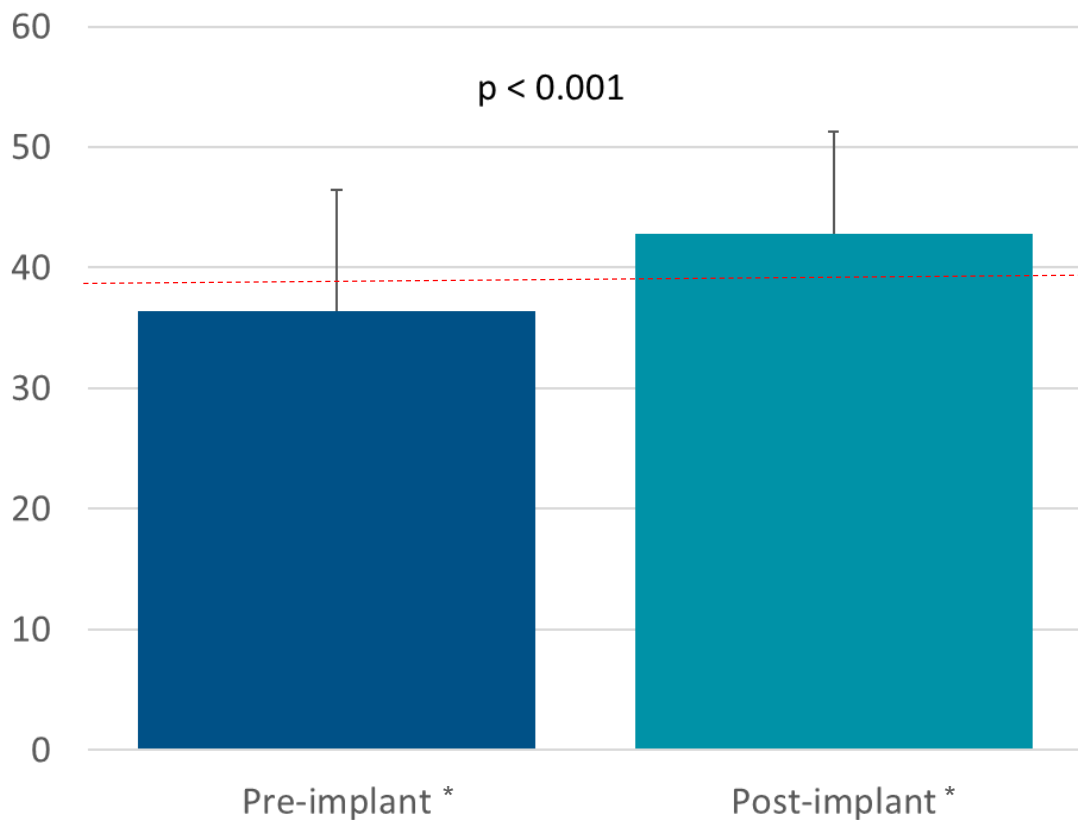
QoL scores over time are compared to baseline, so do not reflect anticipated decline in QoL scores due to disease progression.

Therefore any reduction in QoL benefit over time may well be due to advancement of underlying disease rather than decline in alfapump benefit.

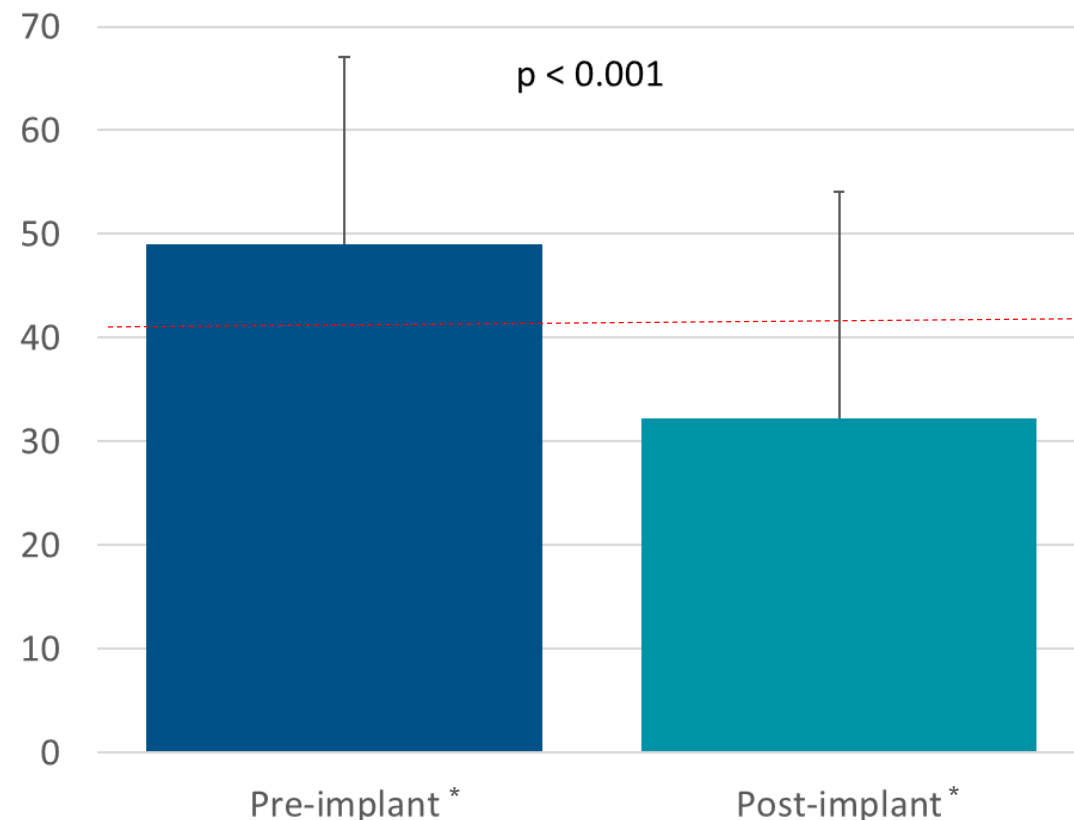


POSEIDON: Clinically meaningful and statistically significant improvement in QoL

SF-36 Physical Component Score (higher is better):



Ascites Q Score (lower is better):



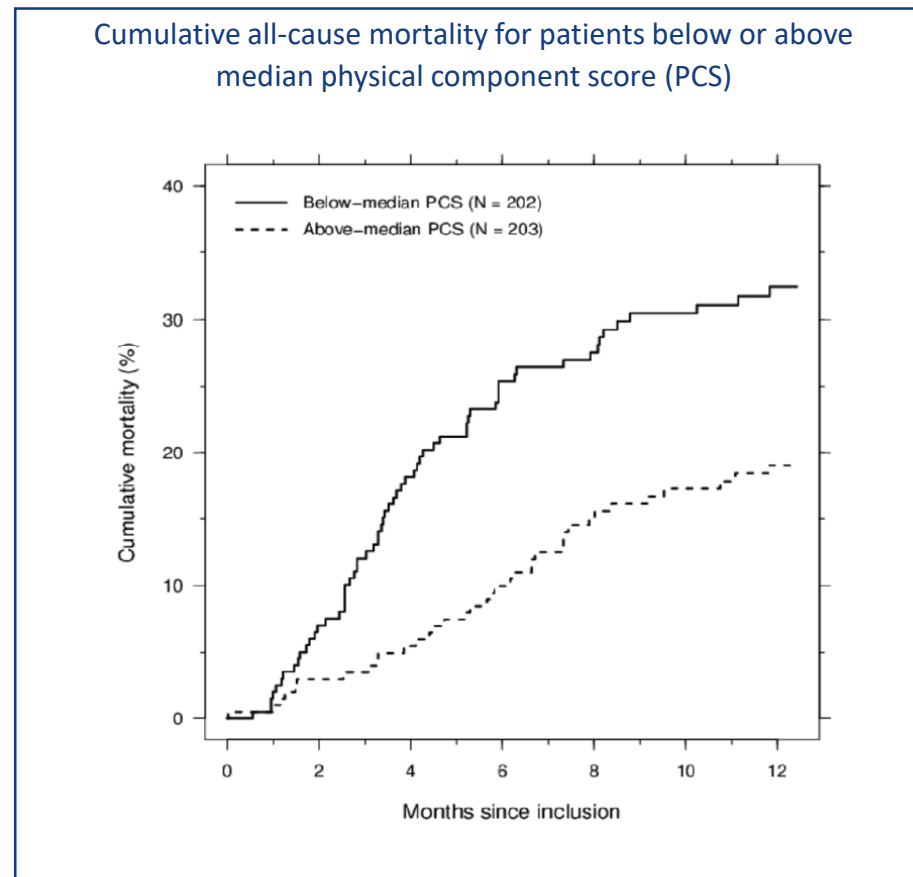
SF-36 Physical Component Score is an independent predictor of mortality⁽¹⁾

Multicenter randomized controlled study in patients with recurrent (N=164) and refractory (N=241) ascites

Patients stratified by survival 1 year after follow-up

Physical component score (range)	PCS of patients who died during follow-up	PCS of patients who survived follow-up	P-value
Physical component score	34 (24-49)	41 (29-53)	0.01
Physical function	45 (25-65)	50 (30-70)	0.42
Role Physical	0 (0-25)	0 (0-50)	0.05
Bodily pain	42 (22-80)	54 (41-74)	0.05
General health	35 (27-50)	40 (30-55)	0.12

- Patients that survived follow-up of 1 year were associated with higher median physical component scores

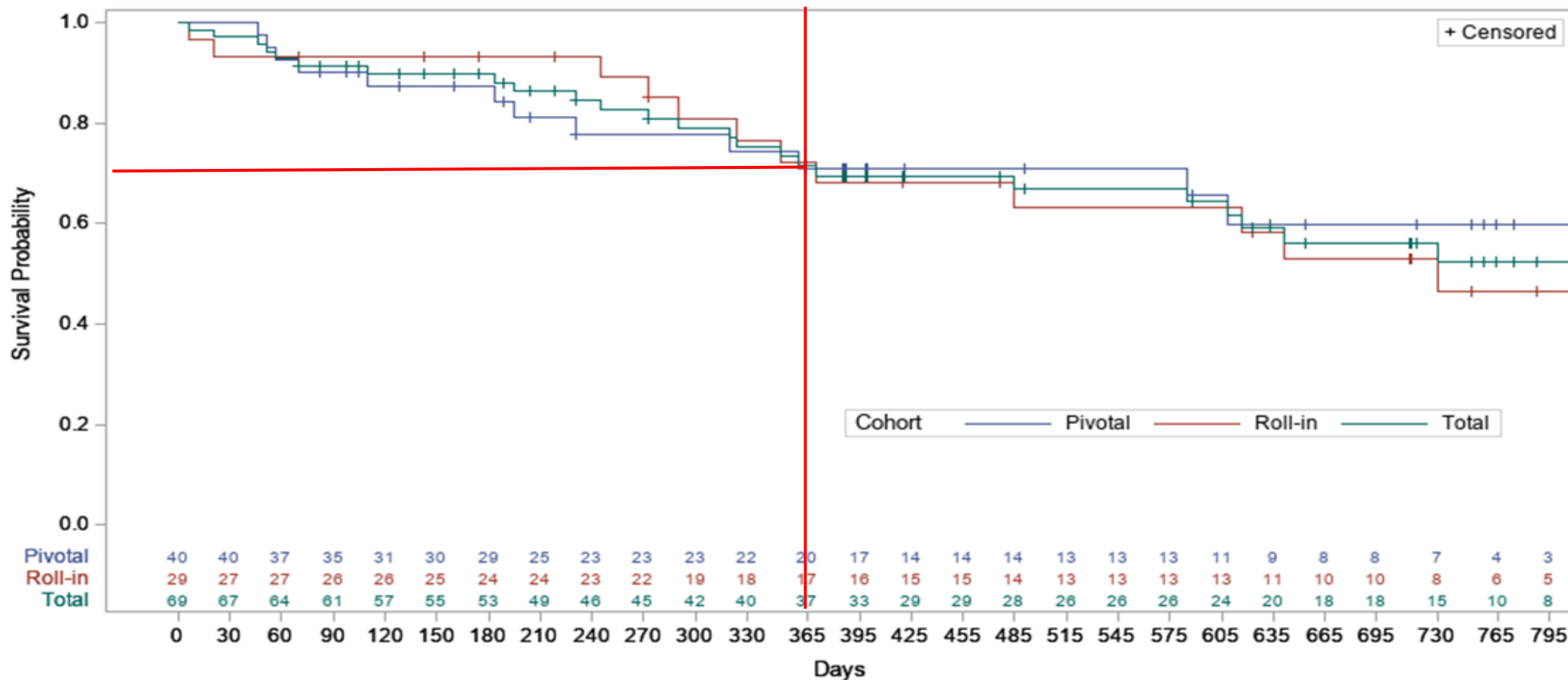


A higher physical component score in the SF-36 QoL tool predicted lower risk of death



POSEIDON: 70% survival at one year post-implantation

Compares favorably to published literature citing 50% survival at 1 year from diagnosis of refractory ascites⁽¹⁾




Note: POSEIDON study not powered for survival

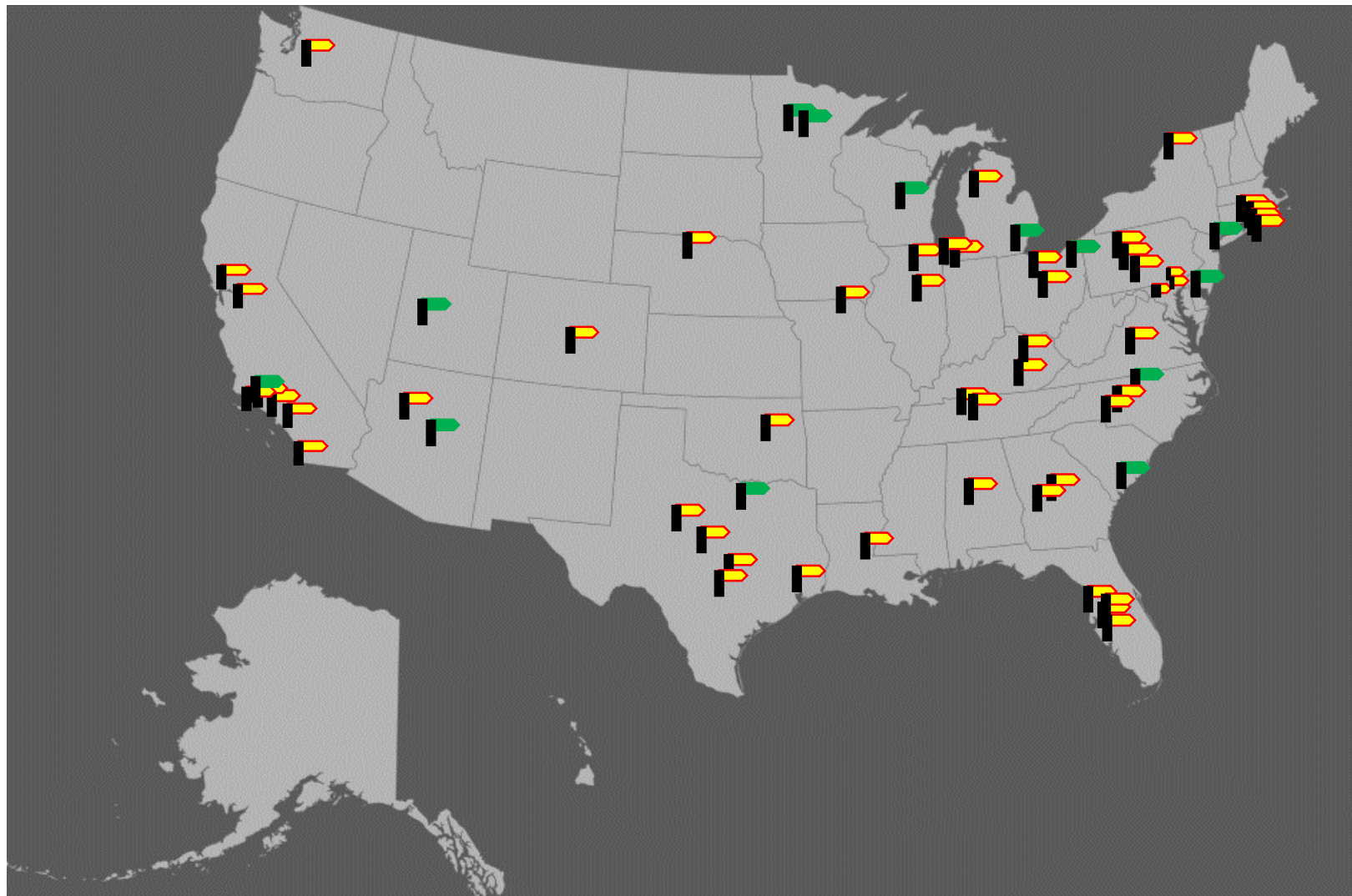
Source 1: Biggins et al., Hepatology, Vol. 74, No. 2, 2021, AASLD Practice Guidance; Moreau R et al., Liver International 2004; 24: 457-464



Top 60 liver transplant centers (2021)

Top 60 centers cover 80% of transplants (6,967 out of 8,685)

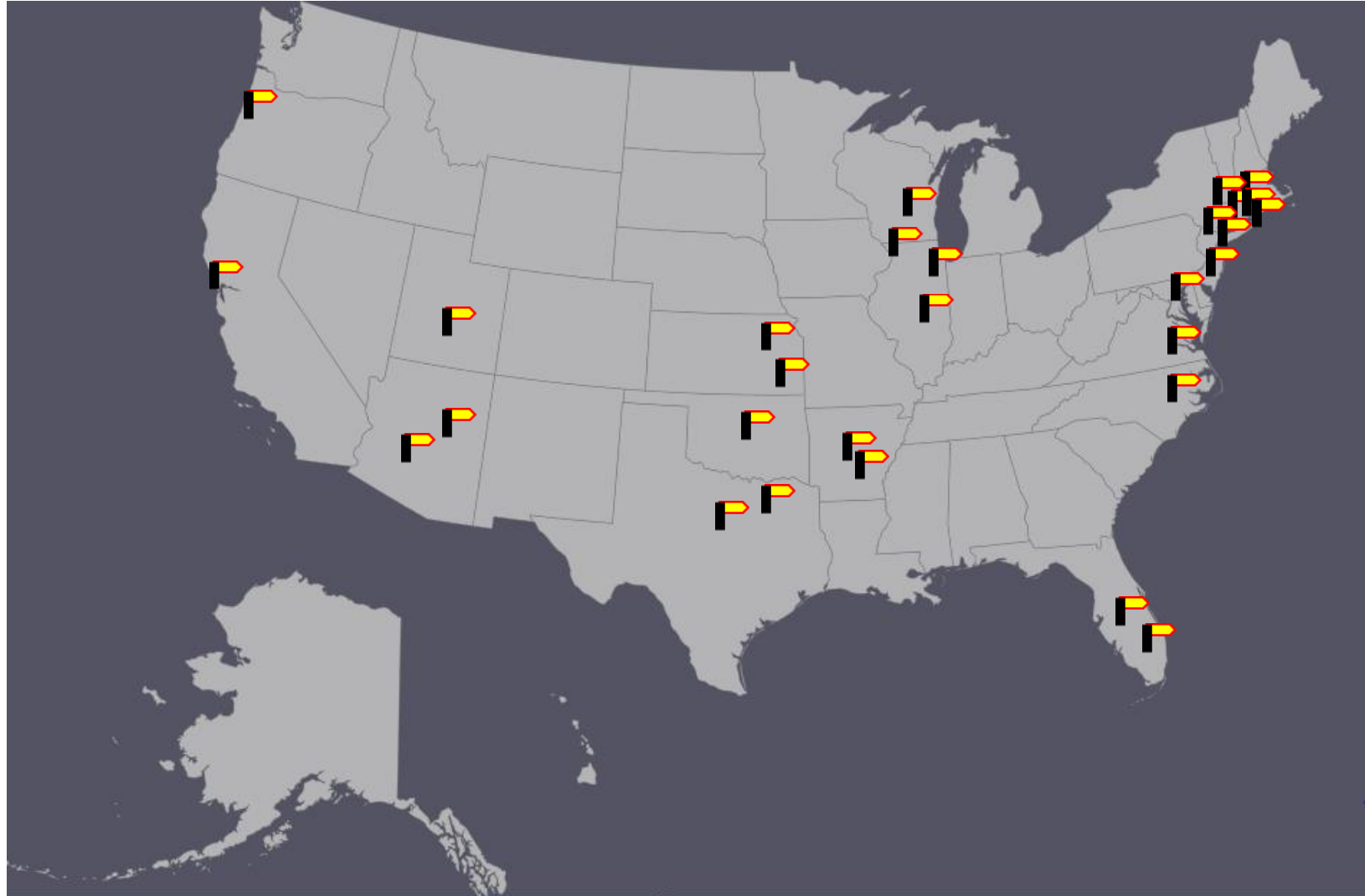
 POSEIDON center
 (N = 13)





Top 61 – 90 liver transplant centers (2021)

30 centers cover 15% of transplants (1,347 out of 8,685)





Leading experts as Heart Failure Scientific Advisors



Dr. Maria Rosa Costanzo

Medical Director of the Edward Center for Advanced Heart Failure
Medical Director Heart Failure Research for the Advocate Heart Institute



Dr. Wilson Tang

Professor of Medicine at Cleveland Clinic Lerner College of Medicine at Case Western Reserve University



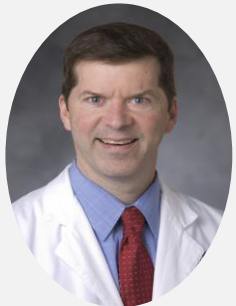
Dr. Javed Butler

Professor and Chairman of the Department of Medicine at the University of Mississippi Medical Center



Dr. Jeffrey Testani

Associate Professor of Medicine and Director of Heart Failure Research at Yale University School of Medicine



Dr. Michael Felker

Professor of Medicine in the Division of Cardiology at Duke University School of Medicine
Director of Cardiovascular Research at the Duke Clinical Research Institute and Vice-Chief for Clinical Research in the Division of Cardiology

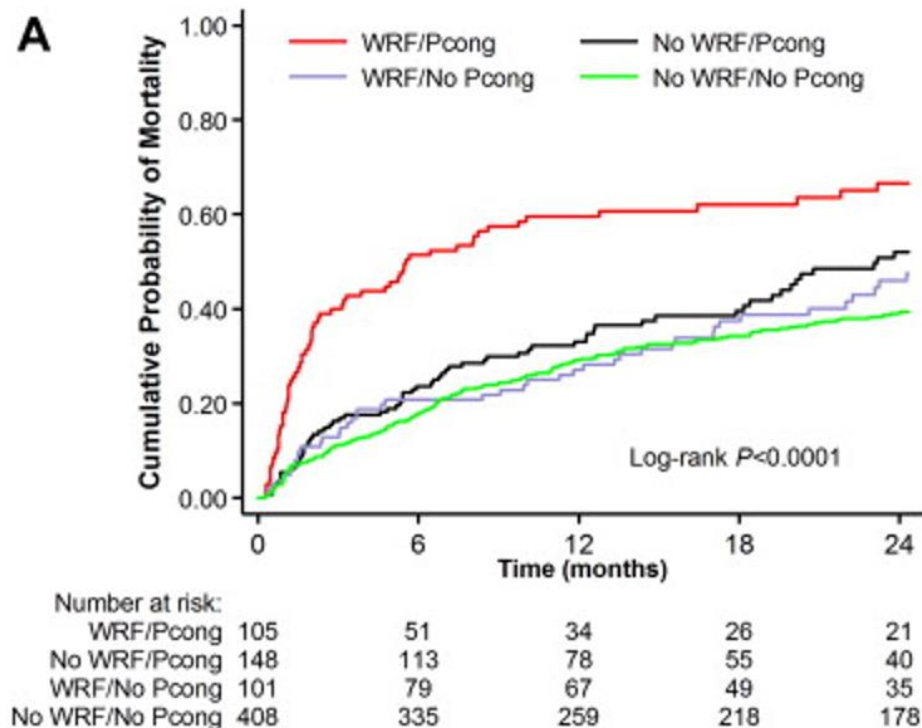


Dr. James Udelson

Chief of the Division of Cardiology at Tufts Medical Center
Professor of Medicine and Radiology at Tufts University School of Medicine

Persistent congestion and Worsening renal function

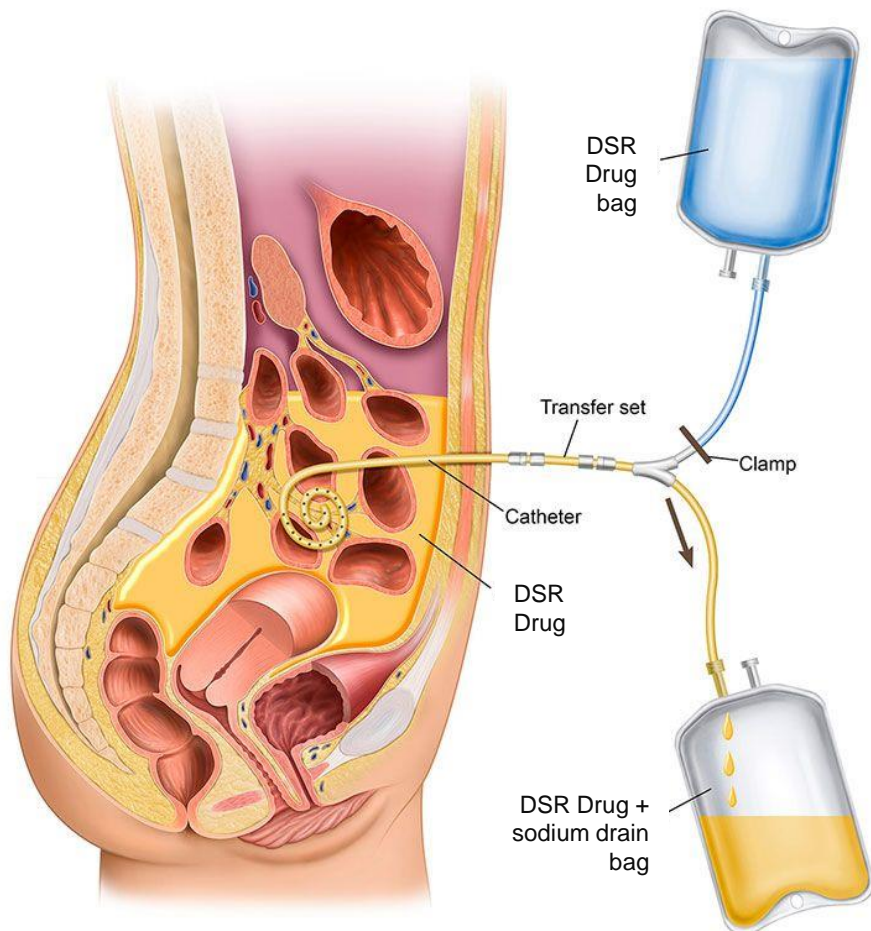
Persistent congestion and worsening renal function are key targets in decompensated heart failure



Wattad et al, American Journal of Cardiology, 2015: interaction between worsening renal function and persistent congestion in acute decompensated heart failure (study of 762 patients)



DSR therapy treatment overview



Step 1: Peritoneal catheter placement

Step 2: DSR treatment episode

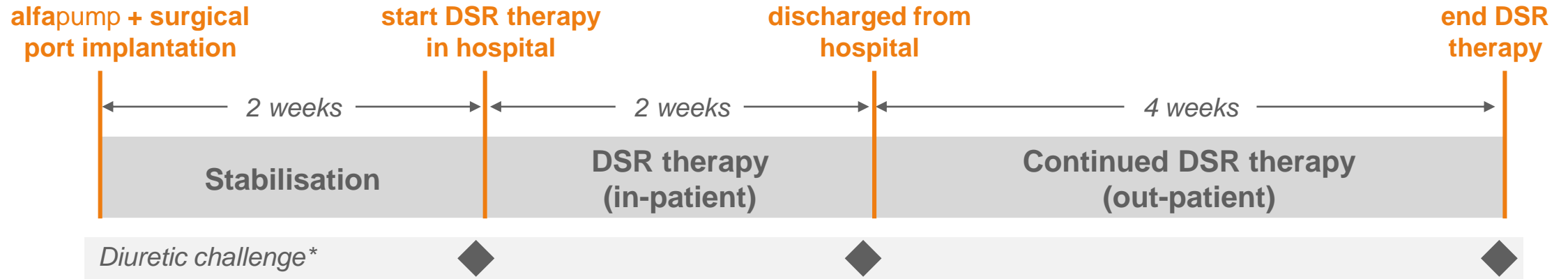
1. Infusion of DSR Drug
 2. 24 hour dwell
 3. Drainage
- Week 1: **5x** DSR therapy
 - Week 2-4: **3x/week** DSR therapy

Step 3: Catheter removal



RED DESERT: The first repeated DSR therapy study

Repeated dose proof-of-concept study of DSR in stable heart failure patients on high dose diuretics



Study Endpoints

- **Primary:** absence/rate of device, procedure and/or therapy related serious adverse events
- **Secondary:** ability of the **alfapump** DSR to maintain a neutral sodium balance in the absence of diuretic therapy and the sustained effect of DSR to maintain euvolemia
- **Exploratory:** impact of DSR to restore response to diuretics following DSR treatment

* 40mg intravenous furosemide to evaluate diuretic response (6 hour sodium and fluid excretion)



RED DESERT: Successful proof-of-concept study

8 euvolemic HF patients on high dose diuretics treated with DSR 3x per week up to 6 weeks

Highly effective management of fluid and sodium balance

- Generally safe and well tolerated; no clinically relevant hyponatremia

Significant improvement in cardio-renal status

- 30% decrease* in NT-proBNP** ($p < 0.001$)
- 22% increase* in eGFR** ($p < 0.001$)

Dramatic and sustained improvement in diuretic response***

- Over 150% increase** in six hour excretion of sodium

No congestion-related heart failure re-hospitalizations

Presented as
Late-Breaker and
Highlight at
Heart Failure 2021

“Simultaneous normalization of diuretic response and improvement in cardio-renal status is a never before seen treatment effect” – Dr. Testani, Yale

* Paired statistical analysis of patients with baseline and D42 value (N=7); ** mean value; ***assessed by 6-hour excretion of sodium after IV administration of 40mg furosemide

NT-proBNP: N-terminal-pro hormone B-type Natriuretic Peptide (analysed in local lab); eGFR: estimated glomerular filtration rate



RED DESERT: Highly effective management of fluid & sodium

No loop diuretics required during study despite mean baseline dose of >300 mg/day furosemide equivalents

Subject	Ejection Fraction (%)	NT-proBNP (pg/mL)	Daily Dose of loop diuretics (mg)**	
	At baseline	At baseline	At baseline	During DSR Treatment (D0 - 42)
101-001	26	6,110	80	0
101-002	27	2,863	200	0
101-003	28	1,536	400	0
101-005	25	1,628	120	0
101-006*	23	1,963	80	0
101-007*	26	5,927	300	0
101-008*	20	7,853	600	0
101-009†	20	8,831	800	0
<i>Mean (± SD)</i>	<i>24 ± 3</i>	<i>4,589 ± 2,945</i>	<i>323 ± 263</i>	

Study recruited severely ill heart failure patients on very high doses of oral loop diuretics

* in follow-up extension with DSR; † subject 101-009 died at D3

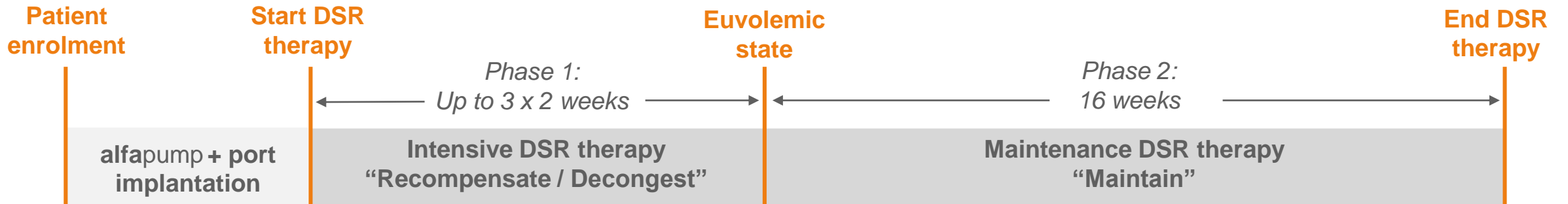
** loop diuretics in furosemide equivalents (mg)

NT-proBNP: N-terminal-pro hormone B-type Natriuretic Peptide – analysed in local lab



SAHARA: Ph. 2a in target patient population

Decompensated heart failure patients with persistent congestion on high dose diuretics



Study Endpoints

- **Primary:** safety and tolerability of **alfapump** DSR therapy
- **Secondary:** feasibility of DSR therapy to restore and maintain euvolemia without additional loop diuretics



SAHARA: Expanding into decompensated patients

10 evaluable diuretic-resistant HF patients with persistent congestion on 2-6 weeks of intensive DSR therapy¹

Safely, effectively and rapidly eliminate persistent congestion & restore euvolemia

- All patients achieved euvolemia within one week of intensive DSR therapy
- Weight loss* of 7kg vs. baseline at end of intensive DSR therapy & no clinically relevant hyponatremia

Considerably benefit cardio-renal status

- More than 30% reduction* in NT-proBNP
- Stable eGFR despite dramatic fluid loss

Dramatic and sustained improvement in diuretic response**

- End of intensive DSR therapy: more than 160% increase* (near normal levels)

No congestion-related heart failure re-hospitalizations

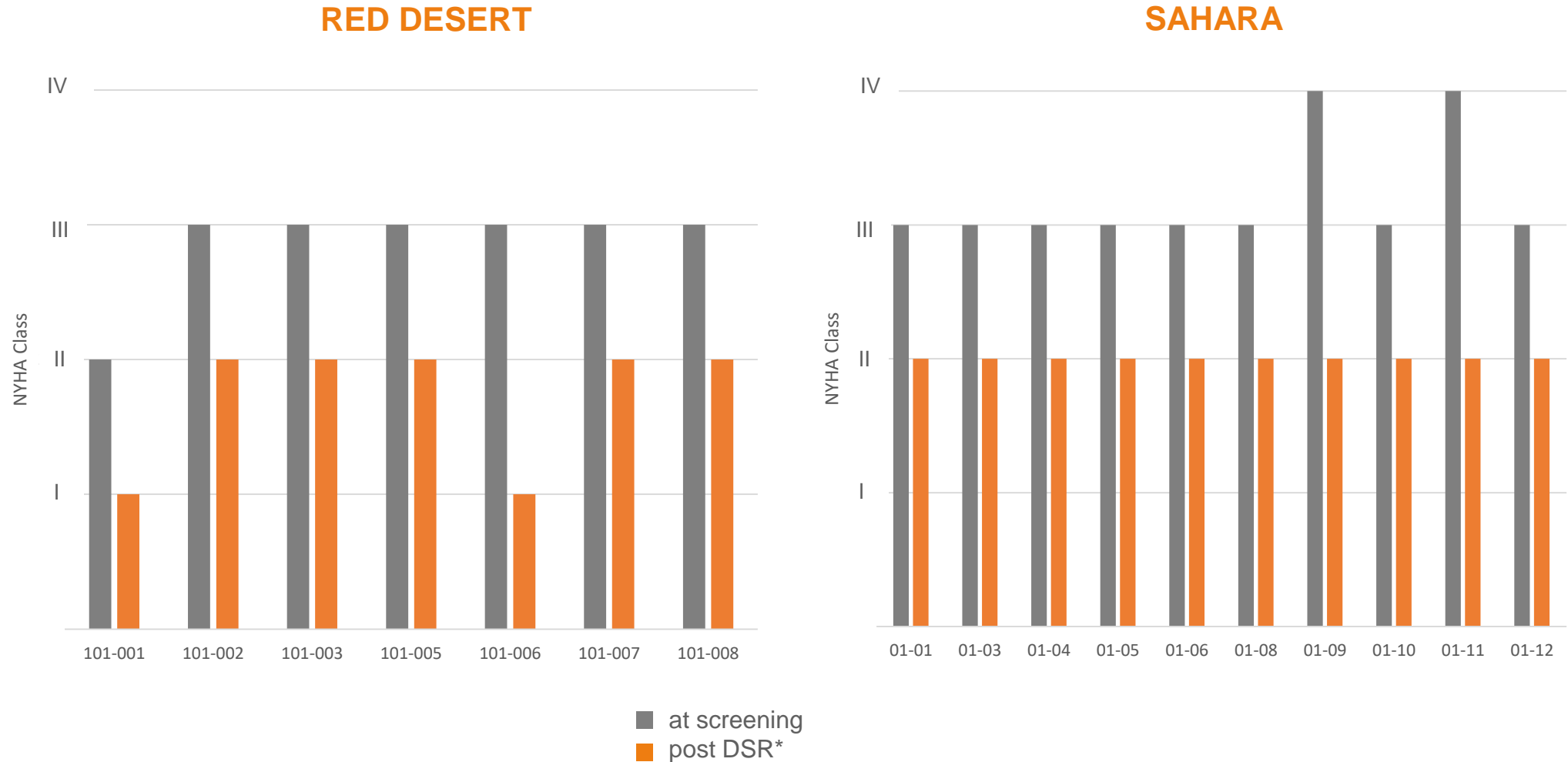
“The SAHARA results are highly encouraging and indicate the potential for DSR therapy to deliver clinically meaningful decongestion and durable improvements in cardio-renal function and thus diuretic response” – Dr. Testani, Yale

¹ two additional patients were dosed but one patient died due to a cardiac arrest three days after study initiation and for one patient the study protocol was not correctly applied

*mean value; ** assessed by 6-hour excretion of sodium after IV administration of 40mg furosemide; **NT-proBNP**: N-terminal-pro hormone B-type Natriuretic Peptide (analysed in local lab); **eGFR**: estimated glomerular filtration rate



Consistently improved NYHA class



* Post DSR = end of phase 1 (6w) in RED DESERT and day 42 in SAHARA

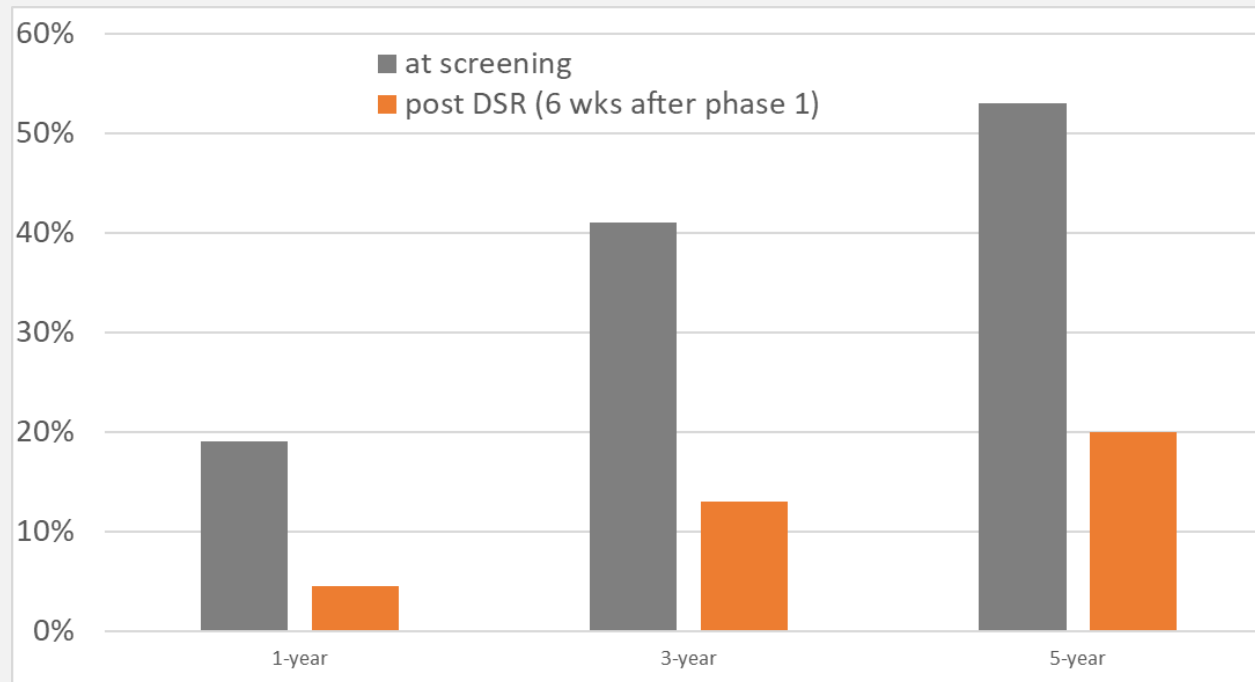
Note: data on NYHA classification collected outside study protocols of RED DESERT and SAHARA



Strong reduction in predicted mortality

Over 75% reduction in predicted one-year mortality based on Seattle Heart Failure Model*

- Seattle Heart Failure Model is a highly validated model to predict survival in heart failure
 - Validated in approx. 10,000 heart failure patients in over 46 countries with >17,000 person-years follow-up
 - Excellent accuracy, with predicted vs. actual one-year survival rate of respect. 90.5% vs. 88.5%
- Substantial reduction in overall predicted mortality post DSR* vs. screening, at 1y, 3y and 5y:



* Predicted one-year survival analysis using Seattle Heart Failure Model with seven patients from RED DESERT and ten patients from SAHARA pre- and post-intensive DSR therapy. Analysis includes physician-assessed data collected post hoc.

** Post DSR = 6 weeks after phase 1 (phase 1 = 6th week in RED DESERT; 2nd, 4th or 6th week in SAHARA)



SAHARA: Safety

No clinically relevant changes in serum sodium levels or progressive hyponatremia

- 3 SAEs in 3 patients:
 - Blocked peritoneal catheter (phase 2) 2 in 2 patients → DMC: related to study device but unrelated to implant procedure or treatment
 - Stable angina (extension) – ongoing 1 in 1 patient → DMC: unrelated to study device, implant procedure or treatment
- No SAEs related to implant procedure or DSR treatment

Evaluating potential for DSR in renal failure

Complementary opportunity leveraging heart failure programme capabilities

- Like heart failure, **kidney failure / dialysis** is one of the leading burdens for healthcare systems and carries a high mortality / morbidity burden
- Hemodialysis seeks to tackle two different challenges – removal of uremic toxins as well as managing the sodium and fluid balance – creating **clinical and economic challenges**
- **DSR therapy** has the potential to **more effectively manage the fluid and sodium balance** of this large patient group
 - ⇒ Leveraging all of our experience from congestion / fluid overload in heart failure
- We are **exploring the potential of DSR** in this large and important patient group, potentially reducing hospitalisations, the cost and burden of hemodialysis therapy as well as mortality
 - ⇒ **Supporting work of Dr McIntyre** (Lawson Health Research Institute, Ontario, Canada): evaluating the use of DSR therapy in effective volume management and sodium removal in prevalent hemodialysis patients (NCT04603014)