LIPOCINE®

ENHANCING HEALTH

CORPORATE PRESENTATION

Enabling Oral Drug Delivery to
Improve Patient Compliance

June 2021

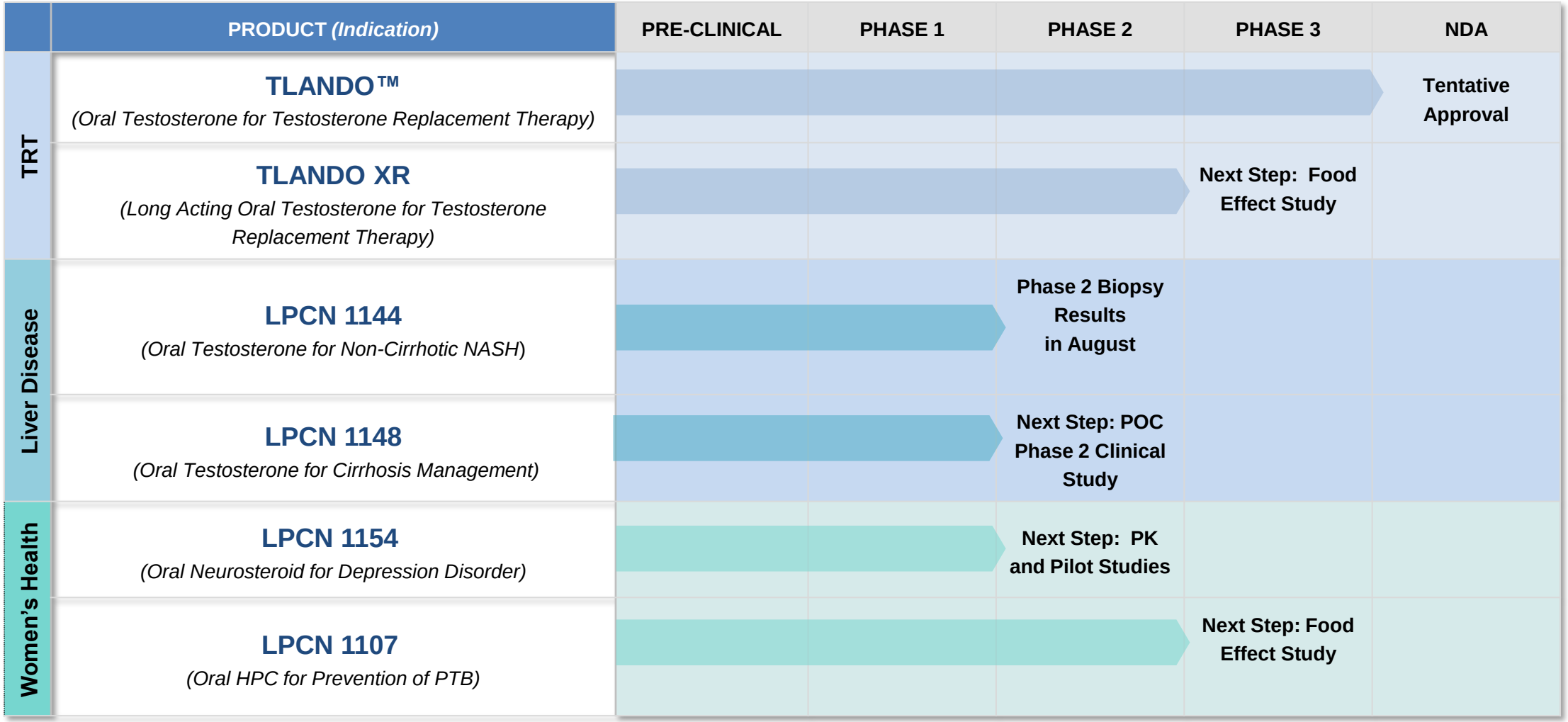
Forward-Looking Statements

This presentation contains forward-looking statements about Lipocine Inc. (the “Company”). These forward-looking statements are made pursuant to the safe harbor provisions of the Private Securities Litigation Reform Act of 1995. These forward-looking statements relate to the Company’s products and product candidates, FDA’s approval of TLANDO™, the expected timing of Phase 3 trials for TLANDO XR and LPCN 1107 and Phase 2 studies for LPCN 1144, LPCN 1148 and LPCN 1154, clinical and regulatory processes and objectives, potential benefits of the Company’s product candidates, intellectual property and related matters, all of which involve known and unknown risks and uncertainties. Actual results may differ materially from the forward-looking statements discussed in this presentation.

Accordingly, the Company cautions investors not to place undue reliance on the forward-looking statements contained in, or made in connection with, this presentation. Several factors may affect the initiation and completion of clinical trials and studies, the potential advantages of the Company’s product candidates and the Company’s capital needs. The forward-looking statements contained in this presentation are qualified by the detailed discussion of risks and uncertainties set forth in the Company’s annual report on Form 10-K and other periodic reports filed by the Company with the Securities and Exchange Commission, all of which can be obtained on the Company’s website at www.lipocine.com or on the SEC website at www.sec.gov. The forward-looking statements contained in this document represent the Company’s estimates and assumptions only as of the date of this presentation and the Company undertakes no duty or obligation to update or revise publicly any forward-looking statements contained in this presentation as a result of new information, future events or changes in the Company’s expectations.

Clinical Stage Biopharmaceutical Company

Innovative Product Candidates for Metabolic and Endocrine Disorders



TLANDO™

The Convenient Oral TRT
without Titration Requirement

TLANDO XR

Once Daily Oral TRT

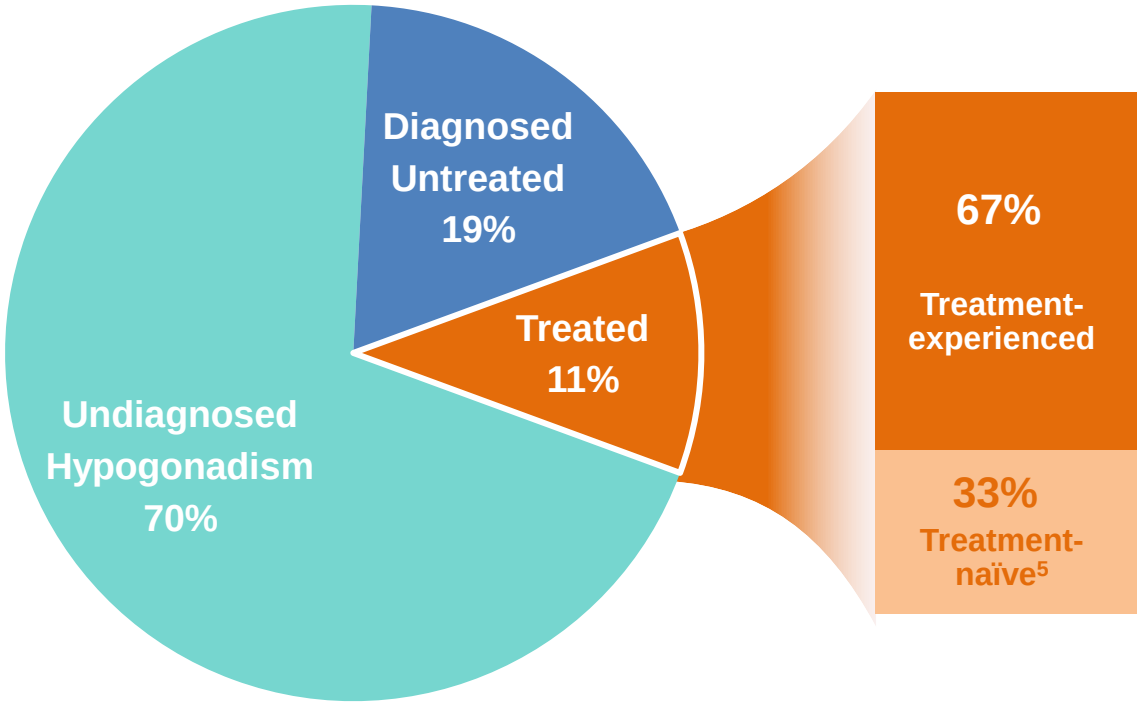
Hypogonadism Affects Approximately 20M Men

TLANDO Franchise has the Potential to Drive Market Expansion

Hypogonadism Under Treatment in US

Close to **6M** men with diagnosed hypogonadism[3]

2M men being treated[4]

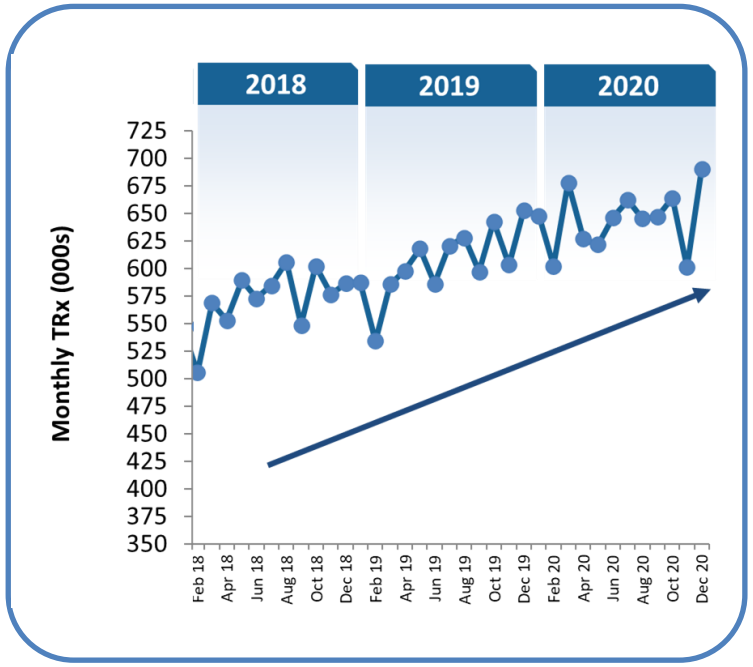


1. US Census data. http://www.infoplease.com/us/census/data/demographic.html. 2. Mulligan T, et al. *Int J Clin Pract.* 2006 Jul;60(7):762-9.
3. Araujo, et al. *J Clin Endo* Metabol 2007. 92(11):4241-7. 4. Symphony Healthcare 2014 for FDA Advisory Meeting. 5. IMS Health Sept 2015.

TLANDO Market Potential

Attributes Particularly Attractive for Topical Switch, and Treatment Naive Patients

Overall TRT Market



~7.6 M 2020 TRx

Topical Segment

- ~24% of TRT market
- ~1.8M 2020 TRx

Naïve Patient Segment

- 33% of ~2M patients
  - ~660K annually

85% of Physicians

Have a strong interest in an oral

94% of TRT Patients

Likelihood to ask their Doctor about TLANDO™

Source: Sources: IQVIA database., Antares Investor Presentation June 2021, and Lipocine Market Research

TLANDO™ Attributes*

Convenient Oral Route

- No inadvertent transference or pulmonary oil micro embolism risks
- Single strength and dose

TRT without titration requirement

- Enables selection of an effective dose at the start of therapy without delay
- No “efficacy gap” upon switching from other TRTs
- No additional pharmacy and clinic copays to reach efficacious dose
- No dose adjustment clinic and pharmacy visits
- No dose adjustment invasive samplings
- No titration decision errors

Bioequivalent exposure in low/med/high fat food

Not known to produce hepatic adverse events associated with 17-methylated testosterone

*pending final approval

Physician Research: Physicians View No Titration Product as Positive

- Cited “easy/less titration” as an important advantage of TLANDO™
- Finding the adequate TRT dose through titration is burdensome for physicians and patients

TLANDO XR: An Innovative Opportunity

Next Generation TRT Option

- TLANDO XR is positioned to be the first oral QD product
- TLANDO XR is clinically differentiated from other orals
- Patients and physicians prefer once a day oral testosterone
- Strong IP (new molecule & proprietary drug delivery technology)
- Positive Phase 2b study results

LPCN 1144

for Non-Cirrhotic NASH

Currently No Approved Treatment

LPCN 1144: *LiFT (Liver Fat Intervention with oral Testosterone)**

Phase 2 Paired Biopsy Study in Men with NASH (NCT04134091)

Study Design

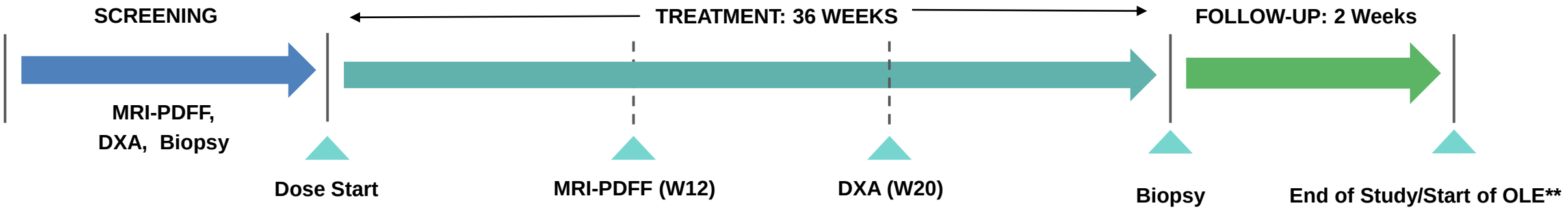
- ❑ Biopsy confirmed male NASH subjects with F1-F3 (N=56)
- ❑ Three-arm, blinded, placebo-controlled
  - 1:1:1 randomization
    - Treatment A: 142 mg eq. T twice daily
    - Treatment B: 142 mg eq. T + d-alpha tocopherol twice daily
    - Placebo twice daily
- ❑ Treatment duration of 36 weeks

Primary Endpoint:

- Change in hepatic fat fraction via MRI-PDFF (W12)

Key Secondary Endpoints:

- Change in NASH activity and fibrosis via liver biopsy scoring (W36)
- Change in hepatic fat fraction via MRI-PDFF (W36)
- Change in liver injury markers, anthropomorphic measurements, lipids, insulin resistance, inflammatory/fibrosis markers
- Patient Reported Outcomes (PROs) including quality-of-life and patient global impression scores (PGI)



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*Website: www.lift-study.com
** Open Label Extension Study (36 weeks)

Summary: Positive Topline Results Post 12 Week Treatment

Both LPCN 1144 Treatment Arms Met the Primary Endpoint with Statistical Significance

01

Statistically significant reduction in liver fat was observed compared to placebo

02

Statistically significant reduction in markers of liver injury were observed compared to placebo independent of hypogonadal status

03

About 2/3rd of subjects on Treatment B had concurrent reductions of liver fat, ALT, and AST

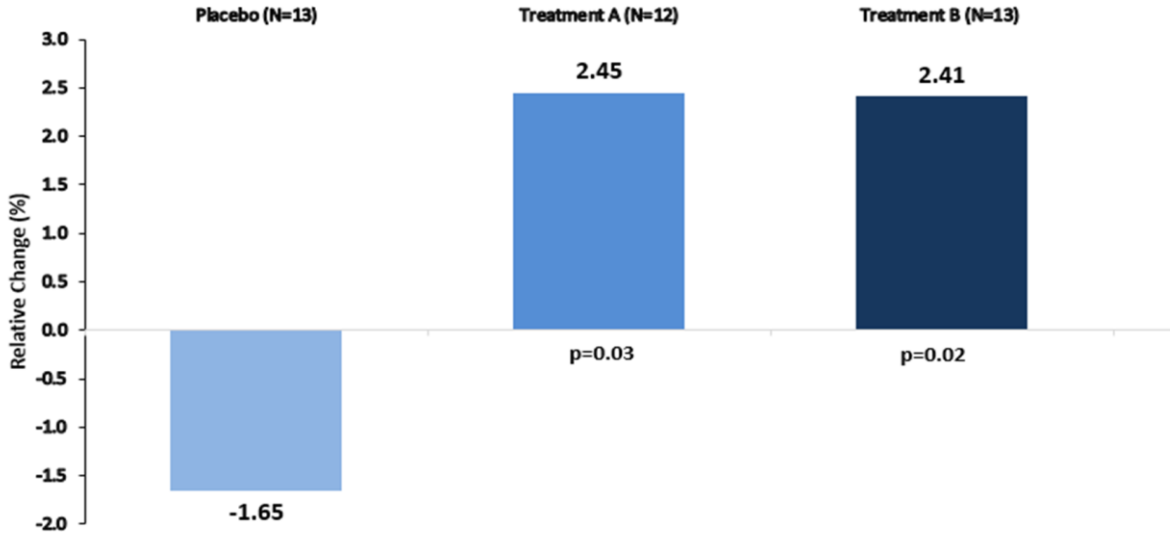
04

Adverse events in both the treatment arms were comparable to the placebo arm

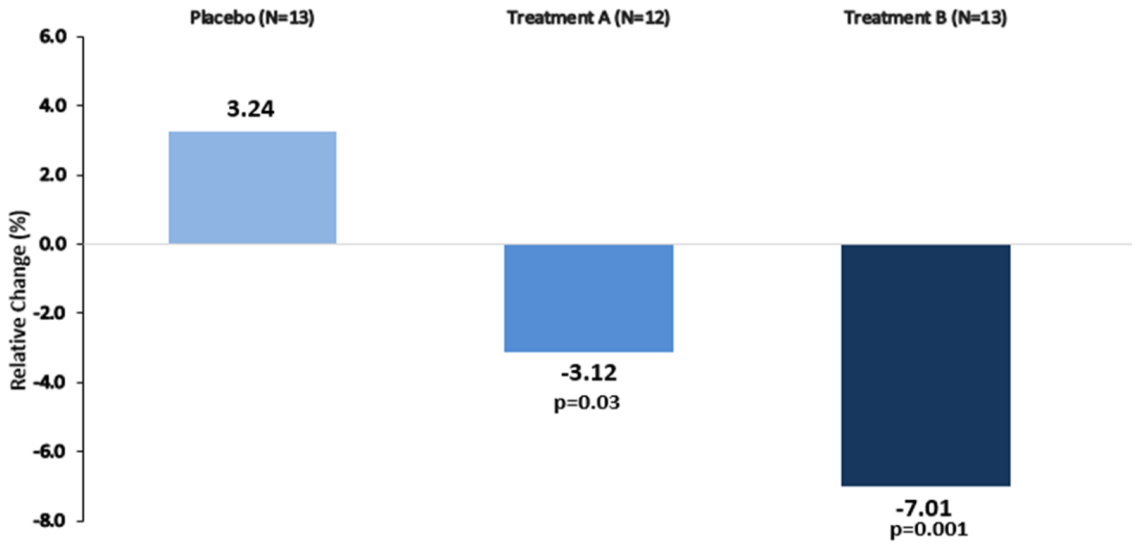
LPCN 1144 DEXA Results In Biopsy-Confirmed NASH Patients (Week 20)

Significantly Improved Body Composition in Both Treatment Arms

Relative change in Appendicular Lean Muscle Mass



Relative Change in Whole Body Fat Mass



*Body composition parameters were evaluated by Dual Energy X-ray Absorptiometry (DXA) scans for subjects with non-missing baseline and Week 20 data

LPCN 1148

for the Management of Liver Cirrhosis (an End Stage Disease)

Liver Cirrhosis in US

Challenges and Opportunities

- Over 2 million cases[1]
- Over 500k living with decompensated cirrhosis[2]
- 62% of individuals on the liver transplant (LT) waitlist[3] are males
- 40-70% of male cirrhotic patients are sarcopenic[4,5]
- High (~$812,500/Transplant) Economic Burden[6]

1. Moon, Clin Gas and Hep, 2019
2. GBD 2017 Cirrhosis Collaboration, Lancet, 2021
3. Sarkar et al. J Hepatol. 2015
4. Sinclair, Ailment Pharmacol Ther, 2016;
5. Lai, Am J Transplant, 2014
6. Bentley & Phillips, Milliman Research Report 2017

LPCN 1148 for Management of Cirrhosis

Targeting Unmet Need in Cirrhosis

Event free survival/Improve quality of life

- Pre-transplant patients and the others who opt-out or are denied being on the transplant list

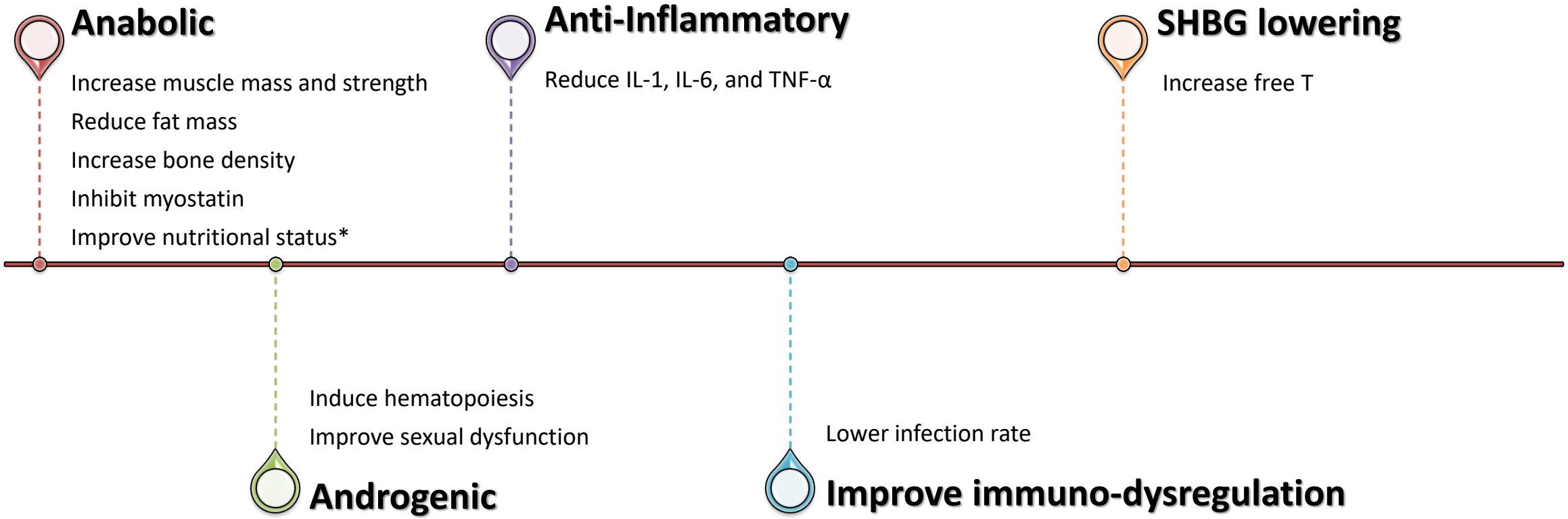
Improvement of post transplant outcomes/costs

- Decreased hospital readmissions
- Shorter length of hospitalization

Improvement in body composition and/or preventing further deterioration may reduce decompensation events

Potential MOA of LPCN 1148 in Cirrhotic Patients

Multi-Modal Action



References: Trivedi and Tapper, Gastroenterol Rep (Oxf), 2018; Berzigotti et al., Hepatology, 2017; Chen and Dunn, Clin Liver Dis (Hoboken), 2018; Sinclair et.al, Liver international, 2016; Neff et al., Digestive Diseases and Sciences, 2004; Puliyel et al., Australian and New Zealand Journal of Medicine, 1977; Brown et al., Cleve Clin Q, 1960; Girolami M, Am Geriatr Soc, 1958; Neff et al., Transplant Proc, 2004; Wells R., The Lancet, 1960; Yurci et al., Clinics and Research in Hepatology and Gastroenterology, 2011; Muting D., Verh Dtsch Ges Inn Med, 1969; Gluud C., Liver, 1984.

*individual's health condition as it is influenced by the intake and utilization of nutrients

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LPCN 1148: Proof of Concept Study

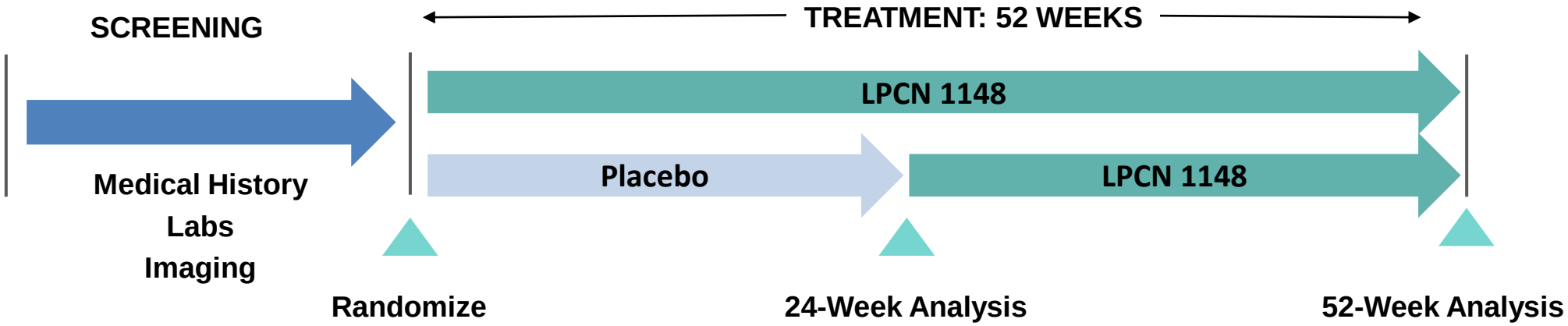
Phase 2, Multicenter, Double-Blinded, Placebo-Controlled Study

Study Design

- Male subjects with cirrhosis of the liver and sarcopenia
- Two-arm (1:1 randomization)
  - Oral LPCN 1148 or Placebo

Endpoints:

- **Primary:** Change in Skeletal Muscle Index at Week 24
- **Key Secondary:**
  - Change in Liver Frailty Index (functional index)
  - Mortality, clinically significant worsening



LPCN 1154

Oral Neuro-Steroid for Depression Disorder

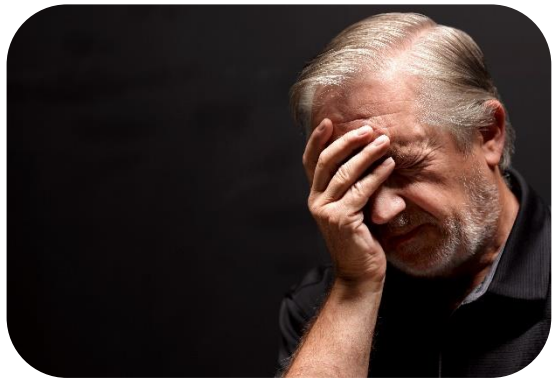
Postpartum Depression (PPD)

A Major Depressive Episode Within Weeks of Delivery

~ 1 in 7 women suffer from PPD after giving birth

Only 50% (~400,000) of patients are currently diagnosed and treated in US

Negative impact on maternal and infant outcomes



Negative impact on spouse

https://www.postpartumdepression.org/resources/statistics/
Evins GG et al. Am J Obstet Gynecol. 2000;182(5):1080-1082
Moore Simas et al. Curr Med Res and Opin. 2018; 35(3):383-393
Goodman J. J Adv Nurs. 2004;45(1):26-35.

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LPCN 1154 – Potential Oral Alternative for Post Partum Depression

Overcome Limitations of the Current Injectable Treatment

- ✓No hospitalization requirement
- ✓No facility REMS requirements
- ✓Opportunity to provide options for all women
  - Lower cost, easier access, and no hospital logistics issues
- ✓Provide the required level of privacy for the mother
- ✓No bonding/breast feeding interruptions due to hospitalized infusion

LPCN 1154 : Next Steps

Proof of Concept Clinical Studies

Received IND clearance for Phase 2 study

- **Phase 2 – Pilot POC Study**
  - •Objective: Safety and efficacy in PPD patients
  - •Projected 1st patient dosed 4Q 2021
    - **- PK study in July 2021**
    - Objective: Dose proportionality
    - Projected top-line results in 3Q 2021

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Upcoming Milestones

Near Term Value Drivers

	Event	Expected Timing
LPCN 1144	LiFT Biopsy Results	August 2021
LPCN 1154	POC Studies	PK results : Q3 2021 P2 patient Dosing : Q4 2021
LPCN 1148	First Patient Dosed	2H 2021
TLANDO™	Final FDA Approval Decision	March 2022

Key Financial Metrics

Stock Price, Market Cap, Cash Balance

Ticker Symbol	**LPCN**
Closing Stock Price (6/7/21)	**$1.27/share**
Cash Balance (3/31/21)	**$50.0 million**
Bank Debt (3/31/21)	**$4.8 million**