



Corporate Presentation

November 2021



TARA-002 for Lymphatic Malformations - An investigational broad immunostimulatory cellular therapy for the treatment of Lymphatic Malformations.



IV Choline Chloride for IFALD - An investigational phospholipid substrate replacement therapy for intestinal



TARA-002 for Lymphatic Malformations - An investigational broad immunostimulatory cellular therapy for the treatment of Lymphatic Malformations.



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Modernizing and Expediting Development of De-Risked Assets



Lead programs: TARA-002 in Non-Muscle Invasive Bladder Cancer (NMIBC) and Lymphatic Malformations (LMs)

- Cell-based immunopotentiator
- NMIBC: Promising existing clinical data in patients and a proven MOA generally similar to current standard of care; Planning to initiate Phase 1 clinical trial by year end
- LMs: Current standard of care in Japan; completed Phase 2 study in the U.S. with additional clinical study planned; FDA granted Rare Pediatric Disease Designation



Other mid-stage development programs provide diversification and additional growth potential

- IV Choline in intestinal failure associated liver disease (IFALD): Completed retrospective study evaluating the prevalence of IFALD in patients dependent on parenteral nutrition
- Completed End Of Phase 2 dialogue with FDA and aligned on Phase 3 design



Company well funded through anticipated key milestones

- \$138M of cash, cash equivalents and marketable debt securities as of September 30, 2021

Pipeline Addresses Multiple Indications With High Unmet Need

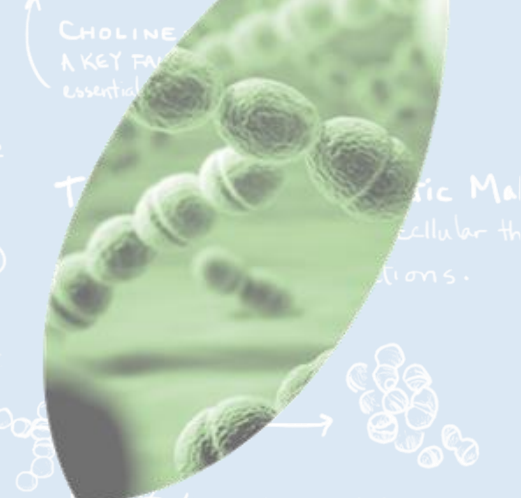
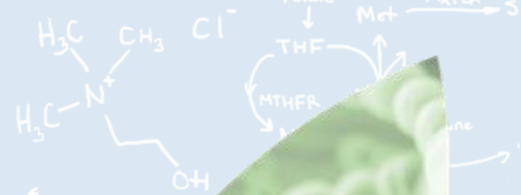
	IND Cleared	Phase 1	Phase 2	Phase 3
IMMUNOLOGY, ONCOLOGY				
TARA-002 – Lyophilized, inactivated Group A <i>Streptococcus</i>				
Lymphatic Malformations (LMs)*				
Non-Muscle Invasive Bladder Cancer (NMIBC)				
HEPATOLOGY, GI, METABOLICS				
IV Choline Chloride for Injection – Phospholipid Substrate Replacement				
Intestinal Failure Associated Liver Disease (IFALD)**,†				
OTHER				
Vonapanitase – Recombinant Human Type 1 Elastase (phase 1 studies completed in fistula patency and PAD)				

TARA-002

LYOPHILIZED, INACTIVATED GROUP A
STREPTOCOCCUS PYOGENES



...d immunostimulatory cellular therapy
...lymphatic Malformations.



CHOLINE
A KEY FACTOR
essential nutrient

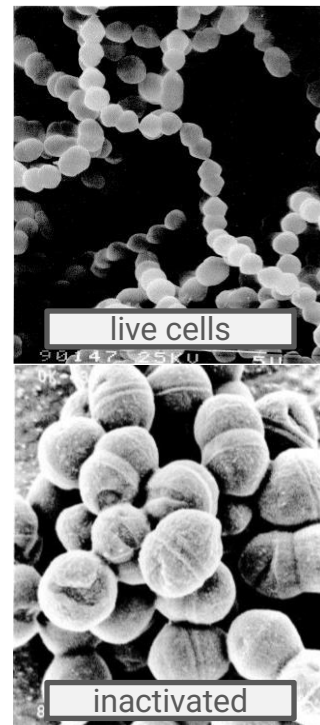
- An
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(LD)

Streptococcus pyogenes

Choline Chloride for IFALD - An
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...ailure-associated liver disease (IFALD)

TARA-002: Cell-Based Immunopotentiator with Significant Potential

- TARA-002 is an investigational, genetically distinct strain of *Streptococcus pyogenes* that is inactivated while retaining its immune-stimulating properties
- TARA-002 is manufactured under GMP conditions from the same Master Cell Bank as originator therapy OK-432⁽¹⁾, which is approved for LMs and a number of oncology indications in Japan
- OK-432 has been studied in many different types of cancer and there are close to 2,000 separate publications for OK-432 listed in PubMed
- Protara has successfully demonstrated GMP-scale manufacturing comparability between TARA-002 and OK-432, allowing the extensive data generated by OK-432 to help support TARA-002*
- Protara has worldwide rights ex-Japan & Taiwan for TARA-002/OK-432

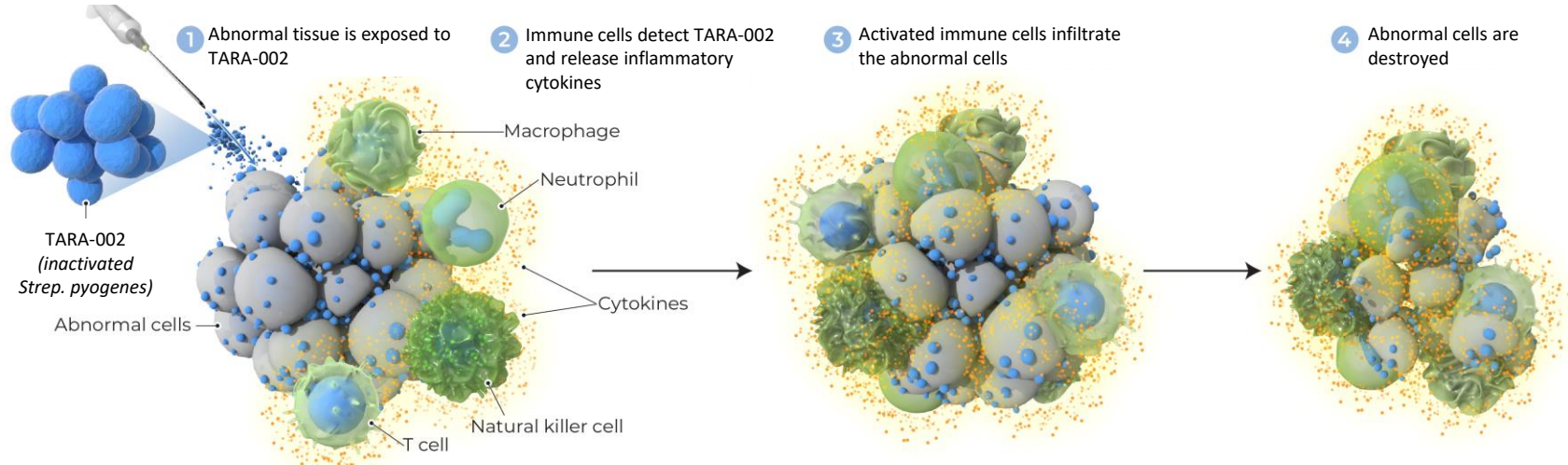


TARA-002: Mechanism of Anti-Tumor / Anti-Cystic Activity

Th1 Like Anti-Tumor Cytokine Response

Multi-Cytokine Inducer⁽¹⁾⁽²⁾⁽³⁾

IL-2 IL-6 IL-8 IL-10 IL-12 GM-CSF G-CSF TNF- α IFN- γ



OK-432: Human Efficacy Data in Multiple Indications

OK-432 has been approved (ex-US) or studied in multiple indications

APPROVED INDICATIONS IN JAPAN¹

- **Lymphangiomas (Lymphatic Malformations)**
- Gastric cancer combo with chemo (post-operative)
- Primary lung cancer combo with chemo
- Reduction of ascites in gastrointestinal cancer
- Reduction of pleural effusion in lung cancer
- Unresponsive head, neck & thyroid cancer



OK-432 CLINICAL RESEARCH CONDUCTED IN:

• **Non-Muscle Invasive Bladder Cancer**

- Ovarian cancer
- Malignant mesothelioma
- Pancreatic cancer
- Esophageal cancer
- Oral squamous cell cancer
- Hepatocellular cancer
- Ranula
- Thyroglossal cysts
- Pleurodesis
- Seroma
- Symptomatic lymphocele
- Auricular hematoma

TARA-002

NON-MUSCLE INVASIVE BLADDER CANCER (NMIBC)



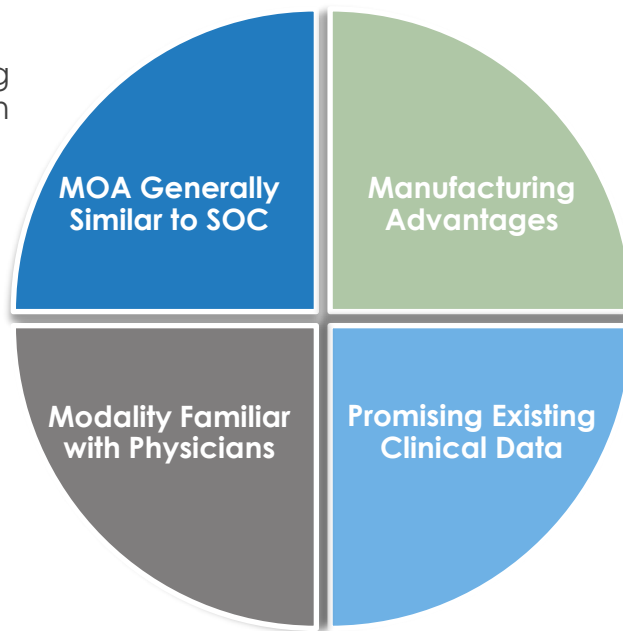
Line Chloride for IFALD - An investigational phospholipid substrate replacement therapy for intestinal failure-associated liver disease (IFALD)

TARA-002 in NMIBC: Profile Supports Potential in NMIBC

Cell-Based Immunopotentiator with Notable Patient Experience

- Elicits Th1 type response inducing multiple cytokines to produce an anti-tumor effect
- Mechanistically similar to the current SOC, Bacille Calmette-Guérin (BCG)

- MOA with which urologists are familiar and have been using for decades
- Intravesical administration is preferred clinical approach among urologists⁽¹⁾



- State-of-the-art U.S. manufacturing facility
- TARA-002 manufacturing process supported by 40 years of production history of OK-432
- ~150 NMIBC patients tested with OK-432 demonstrated promising results⁽²⁾
- Treatment generally well tolerated

Clinical Evidence of OK-432 Provides Strong Rationale for Development of TARA-002 in NMIBC

Data across multiple studies in ~150 NMIBC patients treated intravesically shows that OK-432:

- Was generally well-tolerated, with safety and tolerability observed across a range of doses
- Demonstrated treatment effect and lower rates of recurrence vs. control group, including in the randomized, controlled setting

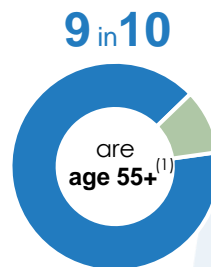
Study	Dose Regimen	Total Pts/ OK-432 Pts	Efficacy Results
Fujita, 1987 Bladder Cancer	2 to 5 KE intratumoral, 5 KE intravesical instillation	78 / 37	In previously unresected tumors, 5 recurrences in OK-432 treated patients vs. 12 recurrences in the control arm ($p < 0.05$) at 36 months. For patients with primary disease, OK-432 showed a benefit over control in multiple subgroups (multifocal, sessile, or high grade).
Fujita, 1988 Bladder Cancer	2 to 5 KE intratumoral, 5 KE intravesical instillation	36 / 17	OK-432 reduced recurrence rates of disease (35% recurrence in OK-432 group compared to ~73% recurrence in surgery alone group); OK-432 caused lymphocyte infiltration into carcinomas (as evidenced by histology after resection).
Sun and Qiu, 2004 Bladder Cancer	3 KE intravesical instillation weekly for 6 weeks then monthly for 6 months	30 / 30	At a mean follow-up of 14 months, tumor recurrence was observed in 16.6% of patients, with no recurrence in 83.4% of patients. OK-432 stimulated secretion of IL-2 and TNF α ($p < 0.05$ for both).
Liu et al., 2017 NMIBC	3 KE (in 30 ml) intravesical instillation	55 / 55	Overall, patients treated in the study had a recurrence rate of 34.5% and progression rate of 10.9%. Treatment with OK-432 was more effective when patients were negative for PD-L1 (16.7% recurrence rate, 4.2% progression rate), regardless of disease stage/grade.
Fujioka et al., 1989 NMIBC	5 KE (intravesical), 10 KE (intratumoral)	38 / 38	Tumors were eliminated endoscopically in 6 of 28 (21.4%) patients in which OK-432 was intravesically instilled [Stage Ta = 5 patients, Stage T1 = 1 patient; all patients Grade 1], and 3 of 10 (30%) patients with intratumoral OK-432 injection.

NMIBC Represents the Most Common Form of Bladder Cancer

Bladder Cancer in the US

6th 
most prevalent
cancer in the U.S.⁽¹⁾

4x
more likely to be diagnosed
in **men**⁽²⁾



High rate of recurrence
with 3-year rate estimated at
up to **80%**⁽³⁾

NMIBC makes up
~80% of all bladder
cancer with **~65,000**
diagnosed per
year in the U.S.⁽⁴⁾

NMIBC patients
are treated by
a **urologist**

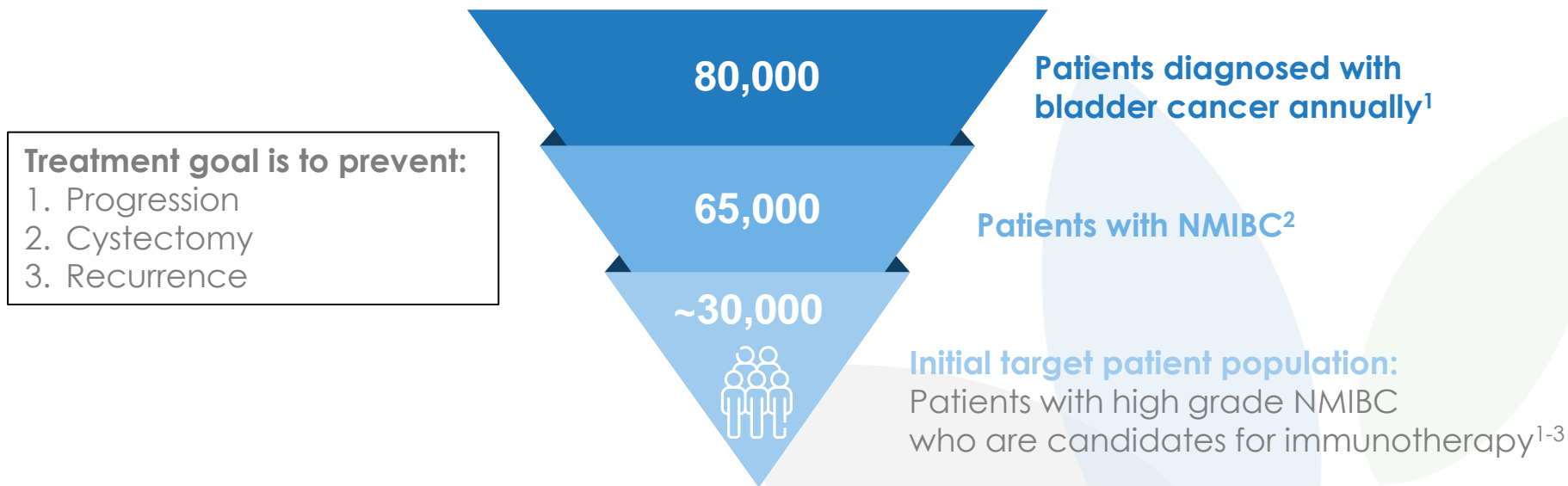


Significant increase in
recurrence, progression
& an escalated number
of patients needing
cystectomies⁽⁵⁾



TARA-002 in NMIBC: Target Patient Population

NMIBC is categorized and treated based on risk stratification, determined by combination of tumor grade, stage, size, recurrence history and focality

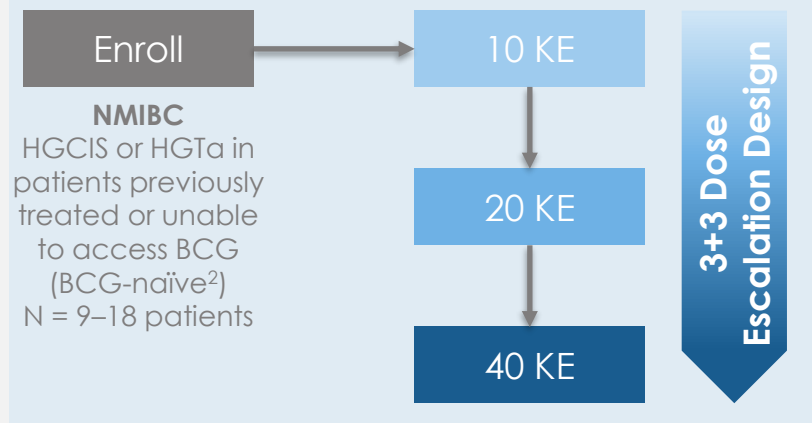


TARA-002 in NMIBC: Phase 1a/1b Study Design

Phase 1

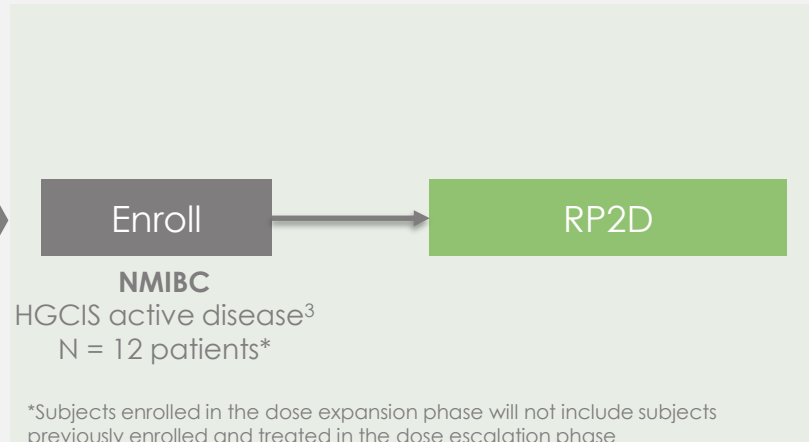
Dose finding, open-label study evaluating intravesical TARA-002 in adults with high-grade NMIBC

Phase 1a: Dose Escalation¹



- Evaluate safety, tolerability and preliminary signs of anti-tumor activity of TARA-002 and establish MTD and RP2D for Phase 2 study

Phase 1b: Expansion Cohort¹



- Further assess safety and preliminary signs of anti-tumor activity of TARA-002 at the established RP2D

¹Subjects will receive weekly intravesical doses of TARA-002 instillation for 6 weeks

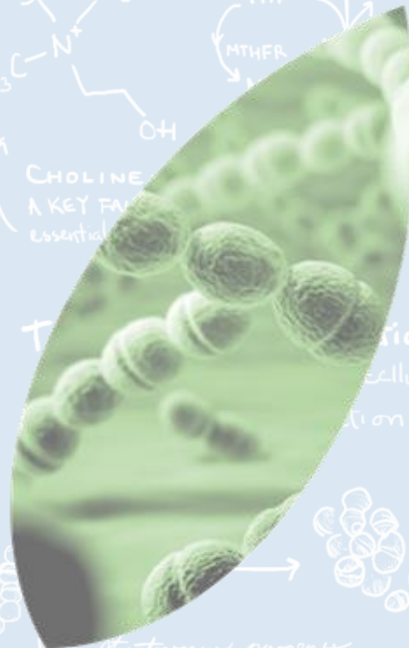
²Defined as not previously treated with or unable to access BCG.

³Defined as disease present at last cystoscopic evaluation during the dose expansion phase.

Definitions: BCG, bacillus Calmette-Guérin; HGCIS, high-grade carcinoma in situ; HGTA, high-grade Ta; KE, Klinische Einheit; MTD, maximum tolerated dose; RP2D, recommended phase 2 dose; TURBT, trans urethral resection of bladder tumor.

TARA-002

LYMPHATIC MALFORMATIONS (LMs)



TARA-002 in LMs



Lymphatic Malformations

Rare, non-malignant lesions consisting of dilated, lymphatic fluid-filled sacs caused by abnormal development of the lymphatic endothelial system⁽¹⁾



Epidemiology

Epidemiology: incidence of lymphatic malformations is \approx 1,400-1,800 LM cases per year⁽²⁾



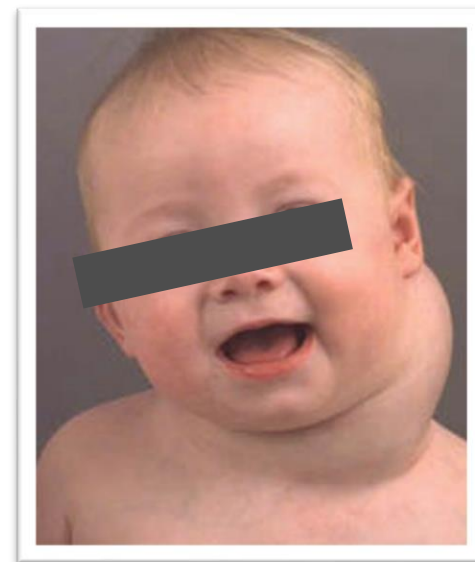
Current Treatment Options

Current treatment options include surgical excision with high complication (33%) and recurrence (55%) rates⁽³⁾ as well as off-label use of sclerosants



FDA Granted Pediatric Rare Disease Designation

Majority of LMs present at birth (65-75%) or by age 3 (80-90%) during active lymphatic growth period⁽³⁾



(1) Brouillard P, et al. J Clin Invest. 2014;124:898-904.

(2) Internal company estimates

(3) Ha J, et al. Curr Ped Rev. 2014;10:238-248.

OK-432 in LMs: Clear Evidence of Biologic Activity in Patients



Before

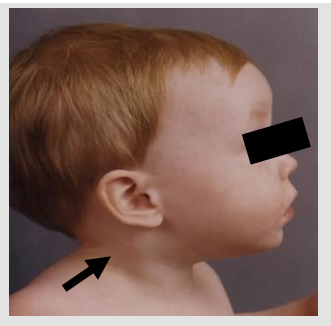
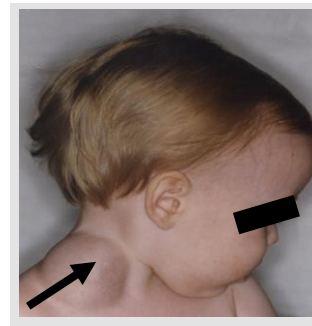
After



Before



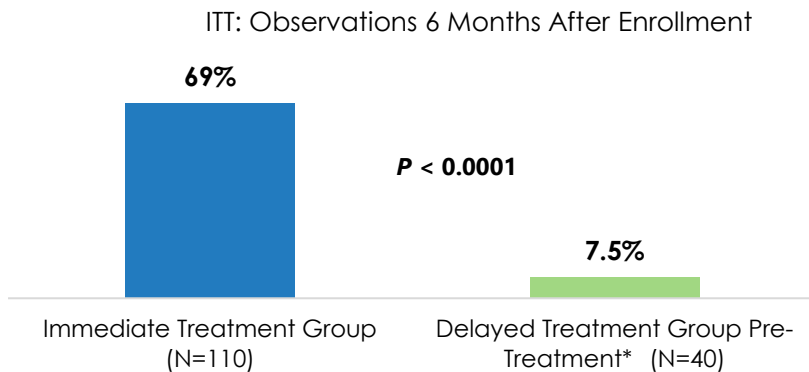
After



Completed Phase 2 study of OK-432 in U.S. provides evidence of treatment effect
with support for strong safety profile

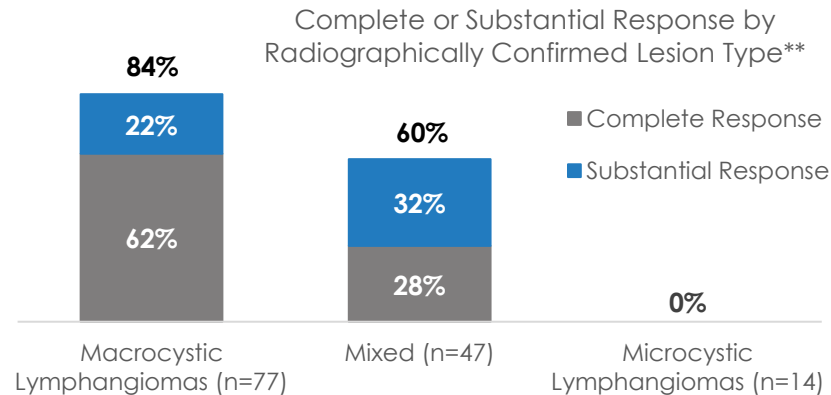
OK-432 in LMs: Robust Results of Completed Phase 2 Study⁽¹⁾ in U.S.

69% CLINICAL SUCCESS[‡] IN IMMEDIATE TREATMENT GROUP 6 MONTHS AFTER ENROLLMENT



- During this same period, 7.5% of patients in the delayed treatment group experienced spontaneous regression of LM
- Treatment: 1-4 injections at 8-week intervals max of 0.2mg/session (2KE)

84%* CLINICAL SUCCESS[‡] IN PATIENTS WITH MACROCYSTIC LESION TYPES



- Patients with radiographically confirmed macrocystic lesions had the greatest chance for clinical success
- In those patients with mixed lesions, clinical success was still achieved

[‡] Clinical Success was defined as complete or substantial response

*Reflects data prior to dosing with OK-432. After dosing, the clinical success rate was 66%, which was not statistically different from the Immediate Treatment Group

**Results were analyzed by lesion type across all treatment groups

(1) Results based on retrospective analysis of source verified data that included the full dataset of subjects enrolled in the P2 randomized study between January 1998 and August 2005, including data in the published study (Smith et al. 2009) which included subjects enrolled between January 1998 and November 2004.

OK-432 in LMs: Compelling Safety Record

Safety Profile*

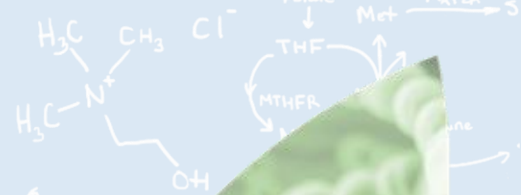
- Most common AEs with treatment were local injection site reactions, fever, fatigue, decreased appetite, with resolution within two weeks
- Treatment emergent SAEs **related** to OK-432: reported in 4.1% of patients, with the most severe events being airway obstruction and facial paralysis due to massive swelling post-injection that required tracheostomy and hospitalization. Both of these events were reported as resolved.
- One SAE **related** to OK-432 led to discontinuation: Proptosis of the eye
- One SAE **not related** to OK-432 led to death: Death due to tracheotomy tube obstruction

IV CHOLINE CHLORIDE

INTESTINAL FAILURE ASSOCIATED LIVER
DISEASE (IFALD)



...d immunostimulatory cellular therapy
...lymphatic Malformations.



CHOLINE
A KEY FACTOR
Essential

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(LD)

T
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cellular th
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Bifidobacterium pyogenes

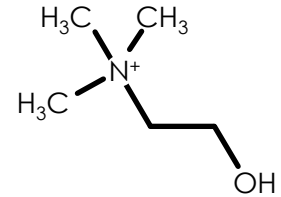
Choline Chloride for IFALD - An
investigational phospholipid substrate
replacement therapy for intestinal
failure-associated liver disease (IFALD)

IV Choline in IFALD: Late-stage Opportunity for an Unmet Medical Need



An Essential Molecule in Several Metabolic Processes

Patients dependent on PN cannot absorb sufficient levels of choline. Data confirms that choline deficient diets results in steatosis and cholestasis.¹ There are currently no approved PN treatments that offer sufficient choline



Clinical History Supporting Choline Substrate Replacement in Patients with IFALD

A Phase 2 study demonstrated the clinical potential of choline substrate replacement therapy by reversing certain hallmark pathologies of IFALD¹



Strong Market Opportunity with Potential to Expand Addressable Patients

Prevalence of patients on PN 79/million²; recent Medicare diagnosis data suggests \approx 5,000 IFALD patients³



Clear Regulatory and Clinical Path Forward

Received Orphan Drug and Fast Track Designations from FDA. Positive End of Phase 2 meeting with FDA requesting Phase 1 PK study and Phase 3 trial to complete registrational package

IV Choline in IFALD: Prevalence Study

Prevalence study to enhance understanding of the patient population

DESIGN

Retrospective, observational study of patients in both academic & community settings

POPULATION

Patients dependent on PN for 6 or more months

OBJECTIVE

- Understand the incidence of cholestasis, a hallmark pathology of IFALD in this patient population
- Measuring serum alkaline phosphatase (ALP) levels greater than 1.5 times the upper limit of normal (ULN) as a key marker of cholestasis

RESULTS

- ~31% of all patients, irrespective of baseline levels, presented with ALP levels greater than 1.5 times the ULN at any given time during 6 to 36 months.
- ~28% of all patients had persistent ALP elevations greater than 1.5 times the ULN at 36 months.
- At baseline, ~23% of patients presented with ALP levels greater than 1.5 times the ULN with ~76% presenting with greater than 1.5 times the ULN at any given time during 6 to 36 months and ~59% with persistent ALP elevations greater than 1.5 times the ULN at 36 months.
- While medical management demonstrated some improvement in ALP levels, it was not sufficient for managing ALP levels over the long term in patients on PN.
- Results support further exploration in patient population to determine rates of choline deficiency & steatosis.

NEXT STEPS

Prospective observational study under way to further characterize the prevalence of choline deficiency, as well as cholestasis and steatosis, in ~300 patients dependent on PN

IV Choline in IFALD : Phase 2 Results

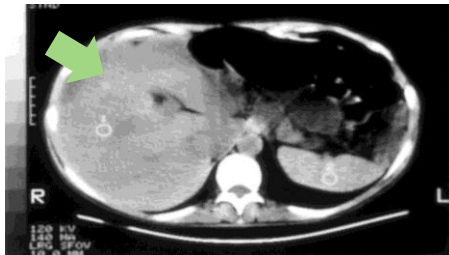
Improvement in Steatosis and Cholestasis

CLINICALLY MEANINGFUL IMPROVEMENT IN STEATOSIS

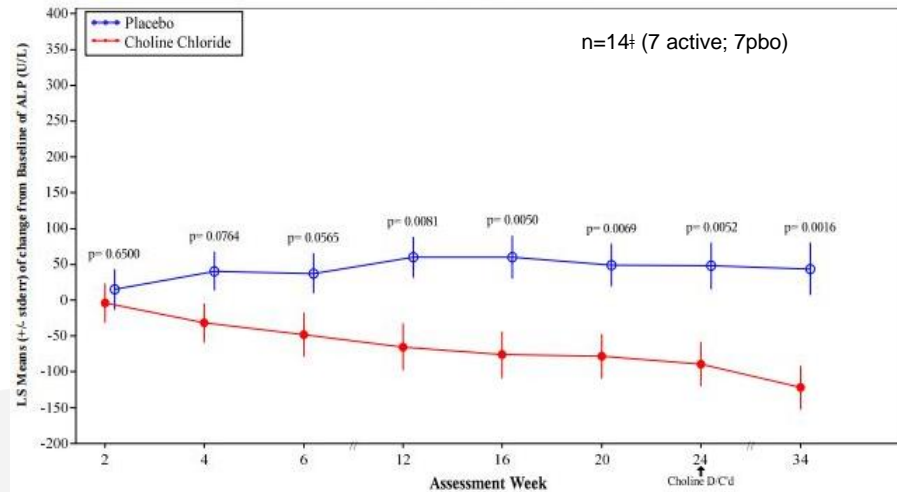
At Baseline



After 24 Weeks



CHOLESTASIS IMPROVEMENT: ALL PATIENTS*(1)



*Mixed model for repeated measurement (MMRM) method used

†A placebo subject was excluded from all analyses due to likely IV contrast-induced imaging abnormalities, confirmed by independent radiologist

Summary



Choline Chloride for IFALD - An investigational phospholipid substrate replacement therapy for intestinal failure-associated liver disease (IFALD)

Building Momentum in 2021

NMIBC:

Significant Market Potential

- ☑ 2H'21: File IND with GMP scale confirmatory comparability data
- Year-End 2021: Initiate Phase 1 study

LMs:

Rare Disease Opportunity

- ☑ 2H'21: Update IND with GMP scale confirmatory comparability data
- 2H'21: Engage FDA on design of additional clinical study

IV Choline:

Late-Stage Pipeline Opportunity

- ☑ 2H'21: Complete retrospective prevalence study to better characterize the unmet need in IFALD

Solid Financial Position

- \$138M of cash, cash equivalents and investments as of September 30, 2021
- 19.2M Common Share Equivalents: 11.2M Common + 8.0M Preferred on as-converted basis as of September 30, 2021



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TARA-002 for Lymphatic Malformations - An investigational broad immunostimulatory cellular therapy for the treatment of Lymphatic Malformations.





Appendix

TARA-002 for Lymphatic Malformations - An investigational broad immunostimulatory cellular therapy for the treatment of Lymphatic Malformations.



IV Choline Chloride for IFALD - An investigational phospholipid substrate replacement therapy for intestinal



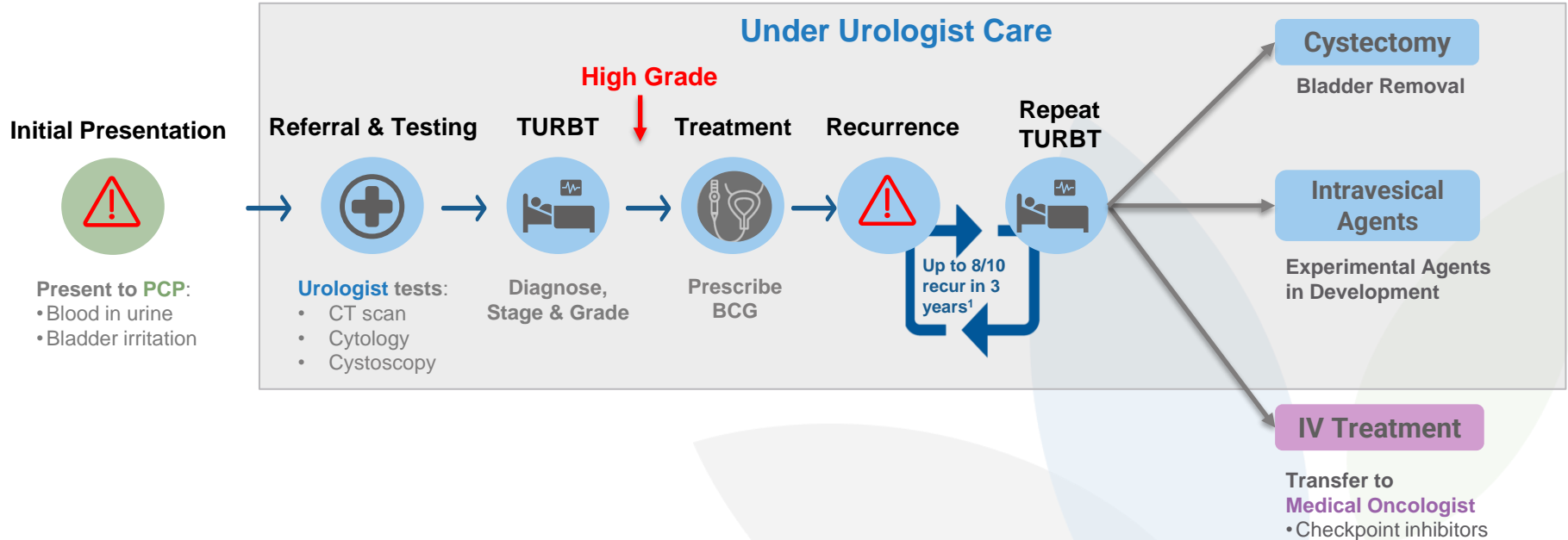
TARA-002 for Lymphatic Malformations - An investigational broad immunostimulatory cellular therapy for the treatment of Lymphatic Malformations.

Chemical structure of Choline Chloride:

[Cl-].[CH3]N([CH3])[CH2]CO

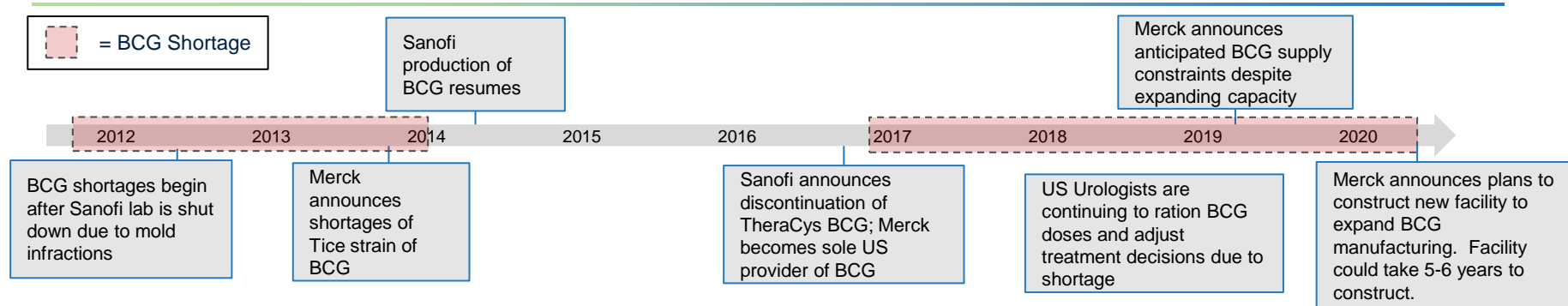
Metabolic pathway diagram showing the conversion of Choline to PC (Phosphatidylcholine) via the CDP-Choline pathway.

Current Standard of Care Highlights High Unmet Need for Patients



(1) Campbell Walsh 11th edition, Elsevier.

BCG Shortage Causes Significant Impact on Care



Shortage has prompted major urological associations to issue guidance on patient management ⁽¹⁾

“...remain extremely concerned about this shortage and its effects on the care of bladder cancer patients...”

-Joint Statement on BCG Shortage, Feb 2019



American
Urological
Association



LUGPA
Integrated Practices
Comprehensive Care



Urology Care
FOUNDATION™
The Official Foundation of the
American Urological Association



Dose rationing and resorting to less desirable treatment options are impacting patient care ⁽²⁾

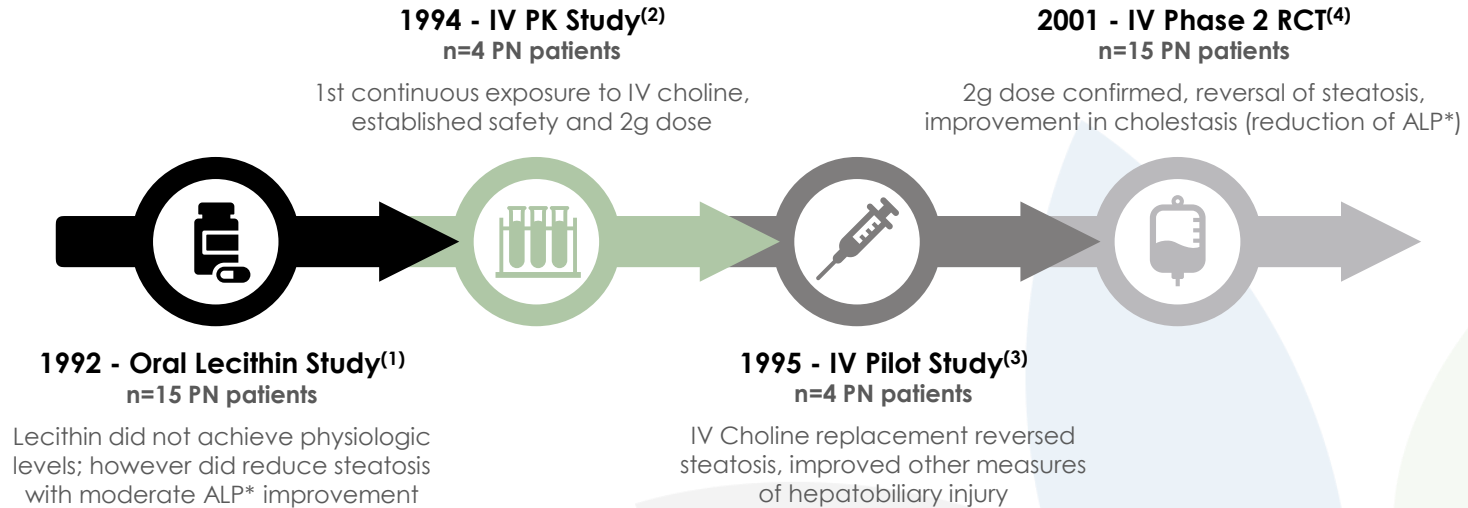
“I see patients **every week** whose **treatment decisions are affected by the BCG shortage**...sometimes I just recommend moving patients more quickly to cystectomy because **we don't have any better options available.**”

-Academic Hospital Urologist

- (1) AUA/SUO Joint Guideline: Published 2016; Amended 2020
 (2) Market Research Conducted by Protara Therapeutics

IV Choline in IFALD: Informative Clinical History

A significant body of supportive evidence across 4 studies



IV Choline in IFALD: Multi-Center Phase 2a POC Study

Randomized, Controlled Study Design & Objective

IV CHOLINE REPLACEMENT PROOF OF CONCEPT STUDY ¹	
Study Design	Randomized Double-blind Phase 2 Trial
Subjects	15 (9 per protocol)
Age	>16 years old
PN Requirement	Greater than 80% of all nutrient requirements supplied by PN
Randomization	1:1 Usual PN or PN + 2g IV choline/day
Duration of Treatment	24 Weeks
Visits	Weeks 2,4,6,12,16, 20, 24
Follow up	Week 34
Dose	2g Choline Chloride QD in PN solution

- The IV Choline Chloride replacement POC, randomized study did not have pre-specified endpoints
- The primary objective of the study was to determine if IV Choline Chloride substrate replacement would reverse hepatic steatosis and improve liver function in patients receiving long-term PN