

UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
WASHINGTON, D.C. 20549

FORM 8-K

CURRENT REPORT  
Pursuant to Section 13 or 15(d)  
of the Securities Exchange Act of 1934

Date of Report (Date of earliest event reported): April 23, 2021

**Protara Therapeutics, Inc.**  
(Exact name of registrant as specified in its charter)

Delaware  
(State or other jurisdiction  
of incorporation)

001-36694  
(Commission File No.)

20-4580525  
(IRS Employer  
Identification No.)

345 Park Avenue South  
Third Floor  
New York, NY  
(Address of principal executive offices)

10010  
(Zip Code)

Registrant's telephone number, including area code: (646) 844-0337

N/A  
(Former name or former address, if changed since last report.)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions:

- Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
- Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
- Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
- Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Securities registered pursuant to Section 12(b) of the Act:

| Title of each class                       | Trading Symbol(s) | Name of each exchange on which registered |
|-------------------------------------------|-------------------|-------------------------------------------|
| Common Stock, par value \$0.001 per share | TARA              | The Nasdaq Capital Market                 |

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933 (§230.405 of this chapter) or Rule 12b-2 of the Securities Exchange Act of 1934 (§240.12b-2 of this chapter).

Emerging growth company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

**Item 7.01. Regulation FD Disclosure.**

On April 23, 2021, Protara Therapeutics, Inc. (the “Company”) issued a press release entitled “Protara Therapeutics Provides Regulatory Update for TARA-002 for the Treatment of Lymphatic Malformations,” a copy of which is attached hereto as Exhibit 99.1 to this Current Report on Form 8-K.

The information in this Item 7.01, including Exhibit 99.1, is being furnished pursuant to Item 7.01 of Form 8-K and shall not be deemed “filed” for purposes of Section 18 of the Securities Act of 1934, as amended (the “Exchange Act”), or otherwise subject to the liabilities of that section, nor shall the information be deemed incorporated by reference in any filing under the Securities Act of 1933, as amended or the Exchange Act, whether made before or after the date hereof, except as shall be expressly set forth by specific reference in any such filing.

**Item 8.01. Other Events.**

On April 23, 2021, the Company made available a Corporate Presentation on the Investor Relations page of the Company’s website, which will be used at investor and other meetings. A copy of the Corporate Presentation is attached hereto as Exhibit 99.2 to this Current Report on Form 8-K and is incorporated herein by reference. The Company does not undertake to update this presentation.

**Item 9.01. Financial Statements and Exhibits.**

(d) Exhibits

| <b>Exhibit No.</b> | <b>Description</b>                                                             |
|--------------------|--------------------------------------------------------------------------------|
| 99.1               | <a href="#">Press Release dated April 23, 2021, issued by the Registrant.</a>  |
| 99.2               | <a href="#">Protara Therapeutics, Inc. Corporate Presentation, April 2021.</a> |

**SIGNATURES**

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

PROTARA THERAPEUTICS, INC.

Date: April 23, 2021

By: /s/ Blaine Davis  
Blaine Davis  
*Chief Financial Officer*

**Protara Therapeutics Provides Regulatory Update for TARA-002 for the Treatment of Lymphatic Malformations**

*Company to conduct additional clinical study to support submission of a Biologics License Application for TARA-002 in Lymphatic Malformations*

NEW YORK, April 23, 2021 -- Protara Therapeutics, Inc. (Nasdaq: TARA), a clinical stage company developing transformative therapies for the treatment of cancer and rare diseases with significant unmet needs, today announced a path forward related to TARA-002 for the treatment of Lymphatic Malformations (LMs), which are rare malformations of the lymphatic vasculature for which there is no U.S. Food and Drug Administration (FDA)-approved treatment. Based on feedback from the FDA, the Company intends to complete confirmatory, large-scale, GMP manufacturing comparability in the second half of 2021 and subsequently initiate a clinical study in pediatric LM patients pending alignment with FDA on study design.

“With the benefit of the recent FDA feedback, we will work with the agency to align on a clinical study in pediatric LM patients, which, we believe, combined with the existing dataset for OK-432 (the originator compound for TARA-002), which demonstrated treatment effect and support for strong safety profile in over 500 LM patients, should provide a robust data package for this rare disease,” said Jesse Shefferman, Chief Executive Officer of Protara Therapeutics. “We have already begun preparation to initiate a clinical study in LMs and we look forward to continued collaboration with FDA to achieve our goal of delivering the first approved medication for LMs to these patients and their physicians.”

TARA-002 is derived from the same cell bank as OK-432, a broad immunopotentiator approved in Japan and Taiwan for the treatment of LMs, where it is currently the standard of care. In 2020, Protara successfully demonstrated initial manufacturing comparability between TARA-002 and the originator compound OK-432, which has been studied in more than 500 patients in one of the largest Phase 2 trials ever conducted in LMs. TARA-002 has been granted Rare Pediatric Disease designation by the FDA for the treatment of LMs.

**About Lymphatic Malformations**

Lymphatic malformations (LMs) are rare, congenital malformations of lymphatic vessels resulting in the failure of these structures to connect or drain into the venous system. Most LMs are present in the head and neck region and are diagnosed in early childhood during the period of active lymphatic growth, with more than 50% detected at birth and 90% diagnosed before the age of 3 years. The most common morbidities and serious manifestations of the disease include compression of the upper aerodigestive tract, including airway obstruction requiring intubation and possible tracheostomy dependence; intralesional bleeding; impingement on critical structures, including nerves, vessels, lymphatics; recurrent infection, and cosmetic and other functional disabilities.

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## **About Protara Therapeutics**

Protara is committed to identifying and advancing transformative therapies for people with cancer and rare diseases with limited treatment options. Protara's portfolio includes its lead program, TARA-002, an investigational cell-based therapy being developed for the treatment of non-muscle invasive bladder cancer and lymphatic malformations, and IV Choline Chloride, an investigational phospholipid substrate replacement therapy for the treatment of intestinal failure-associated liver disease. For more information, visit [www.protaratx.com](http://www.protaratx.com)

## **Forward-Looking Statements**

Statements contained in this press release regarding matters that are not historical facts are "forward looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995. Protara may, in some cases, use terms such as "predicts," "believes," "potential," "proposed," "continue," "designed," "estimates," "anticipates," "expects," "plans," "intends," "may," "could," "might," "will," "should" or other words or expressions referencing future events, conditions or circumstances that convey uncertainty of future events or outcomes to identify these forward-looking statements. Such forward-looking statements include but are not limited to, statements regarding Protara's intentions, beliefs, projections, outlook, analyses or current expectations concerning, among other things: statements regarding Protara's business strategy, including its plans with respect to clinical studies and anticipated timing, Protara's development objectives for its product candidates and related interactions with the FDA. Because such statements are subject to risks and uncertainties, actual results may differ materially from those expressed or implied by such forward-looking statements. Factors that contribute to the uncertain nature of the forward-looking statements include risks and uncertainties associated with: Protara's development programs, including the initiation and completion of non-clinical studies and clinical trials and the timing of required filings with the FDA and other regulatory agencies; the impact of the COVID-19 pandemic on Protara's business and the global economy; general market conditions; changes in the competitive landscape; changes in Protara's strategic and commercial plans; Protara's ability to obtain sufficient financing to fund its strategic plans and commercialization efforts; the loss of key members of management; and the risks and uncertainties associated with Protara's business and financial condition in general, including the risks and uncertainties described more fully under the caption "Risk Factors" and elsewhere in Protara's filings and reports with the United States Securities and Exchange Commission. All forward-looking statements contained in this press release speak only as of the date on which they were made and are based on management's assumptions and estimates as of such date. Protara undertakes no obligation to update any forward-looking statements, whether as a result of the receipt of new information, the occurrence of future events or otherwise, except as required by law.

## **Company Contact:**

Justine O'Malley  
Protara Therapeutics  
[Justine.omalley@protaratx.com](mailto:Justine.omalley@protaratx.com)  
646-817-2836

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# Corporate Presentation

April 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 Choline

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 Choline

Chemical structures and diagrams are visible in the background of this section, including the structure of Choline Chloride (CC[N+](Cl)(O)O) and various metabolic pathways.

## Forward Looking Statements

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Statements contained in this presentation regarding matters that are not historical facts are "forward looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995. Protara may, in some cases, use terms such as "predicts," "believes," "potential," "proposed," "continue," "designed," "estimates," "anticipates," "expects," "plans," "intends," "may," "could," "might," "will," "should" or other words or expressions referencing future events, conditions or circumstances that convey uncertainty of future events or outcomes to identify these forward-looking statements. Such forward-looking statements include but are not limited to, statements regarding Protara's intentions, beliefs, projections, outlook, analyses or current expectations concerning, among other things: Protara's business strategy, Protara's manufacturing and development plans for its product candidates and related interactions with the FDA, ex-U.S. development plans, Protara's financial footing, the impact of the COVID-19 pandemic and related governmental responses on Protara's business and clinical programs. Because such statements are subject to risks and uncertainties, actual results may differ materially from those expressed or implied by such forward-looking statements. Factors that contribute to the uncertain nature of the forward-looking statements include: risks that Protara's sales, revenue, expense and other financial guidance may not be as expected, as well as risks and uncertainties associated with: Protara's development programs, including the initiation and completion of non-clinical studies and clinical trials and the timing of required filings with the FDA and other regulatory agencies; the impact of the COVID-19 pandemic on Protara's business, clinical supply chain, clinical trials, and the global economy; general market conditions; changes in the competitive landscape; changes in Protara's strategic and commercial plans; Protara's ability to obtain sufficient financing to fund its strategic plans and commercialization efforts; having to use cash in ways or on timing other than expected; the impact of market volatility on cash reserves; the loss of key members of management; and the risks and uncertainties associated with Protara's business and financial condition in general, including the risks and uncertainties described more fully under the caption "Risk Factors" and elsewhere in Protara's filings and reports with the United States Securities and Exchange Commission. You are cautioned not to place undue reliance on forward-looking statements, which speak only as of the date on which they were made. Protara undertakes no obligation to update any forward-looking statements, whether as a result of the receipt of new information, the occurrence of future events or otherwise, except as required by law.



## Modernizing and Expediting Development of De-Risked Assets

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

- Cell-based immunopotentiator
- FDA confirmed initial comparability to Japanese predecessor OK-432
- NMIBC clinical development plan in place following Pre-Investigational New Drug (PIND) engagement with FDA
- TARA-002/OK-432 is standard of care in Japan for LMs; completed Phase 2 study in the U.S. with additional clinical study planned to support submission of a BLA; FDA granted TARA-002 Rare Pediatric Disease Designation for the treatment of LMs



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

- IV Choline in intestinal failure associated liver disease (IFALD): Completed End Of Phase 2 dialogue with FDA and aligned on Phase 3 design



### **Company well funded through anticipated key milestones through early 2023**

## Pipeline Addresses Multiple Indications With High Unmet Need

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

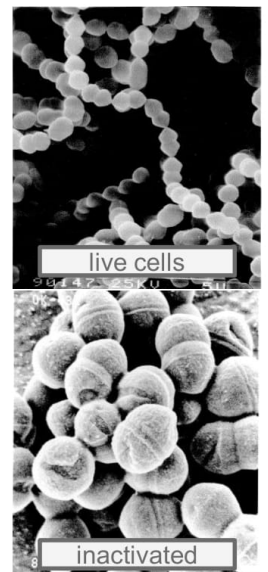


\*TARA-002 Granted Rare Pediatric Disease Designation for the treatment of LMs. OK-432 Granted Orphan Drug Designation by the U.S. FDA for the treatment of LMs, which we believe is applicable under established comparability.  
 \*\*Granted Orphan Drug and Fast Track Designations by the U.S. FDA  
 †Phase 1 PK study to be conducted prior to commencing Phase 3



## 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 OK-432<sup>(1)</sup>, once one of the largest selling oncology products in Japan
- FDA has confirmed initial comparability between TARA-002 and OK-432 and path forward to completion of GMP comparability
- Having established initial comparability to OK-432, the extensive data generated by OK-432 will help support TARA-002



- Protara has worldwide rights ex-Japan & Taiwan for TARA-002/OK-432

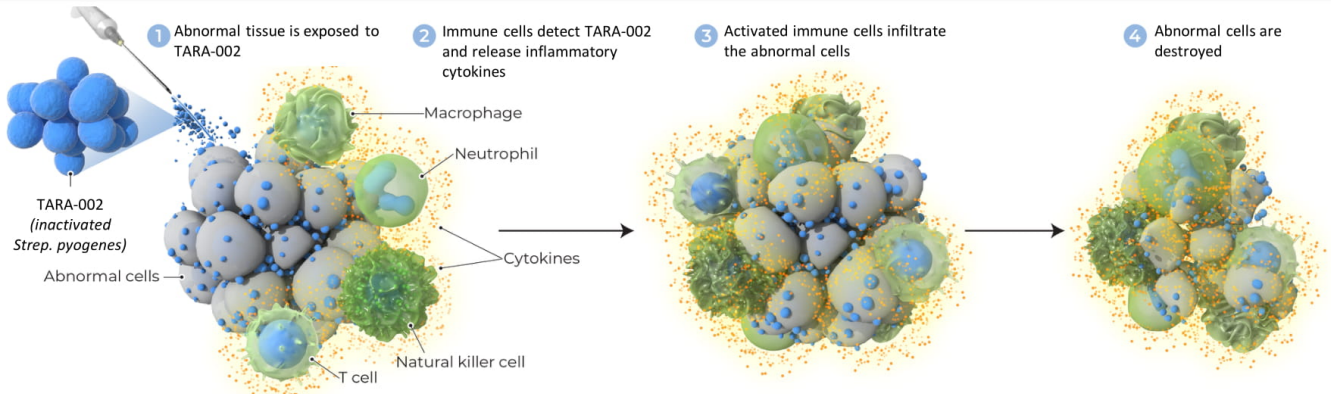
(1) Marketed in Japan and Taiwan as Picibanil®.  
Note: Manufacturing modifications reflect manufacturing to U.S. cGMP standards

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

## Th1 Like Anti-Tumor Cytokine Response

Multi-Cytokine Inducer<sup>(1)(2)(3)</sup>

IL-2 IL-6 IL-8 IL-10 IL-12 GM-CSF G-CSF TNF- $\alpha$  IFN- $\gamma$



- (1) Fujimoto T., et al. J Immunol. 1997; 5619.
- (2) Ryoma Y, et al. Anticancer Res. 2004; 3295-3298.
- (3) Zhao H, et al. Microbiol. Immunol. 1994; 183-190.

# OK-432: Human Efficacy Data in Multiple Indications

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



## 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

## APPROVED INDICATIONS IN JAPAN<sup>(1)</sup>



- **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



(1) Full Prescribing Information, Chugai Pharmaceuticals, 2016

## TARA-002

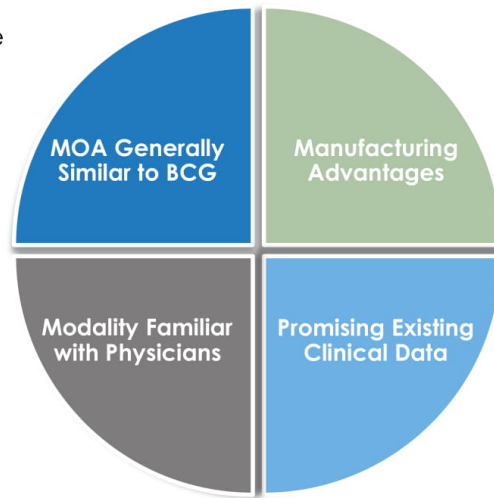
NON-MUSCLE INVASIVE BLADDER  
CANCER (NMIBC)



# TARA-002 in NMIBC: Profile Supports Potential in NMIBC

## *Similar mechanism to BCG, notable patient experience in Asia and manufacturing advantages*

- Prompts a predominantly Th1 type cytokine response
- Mechanistically similar to Bacille Calmette-Guérin (BCG)
- Urologists have been using an attenuated bacteria, BCG, as immunotherapy for decades
- Intravesical administration is preferred clinical approach among urologists<sup>(1)</sup>



- 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<sup>(2)</sup>
- Treatment generally well tolerated



(1) Market Research Conducted by Protara Therapeutics  
(2) Study references available by request  
Note: OK-432 is not approved for NMIBC



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

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

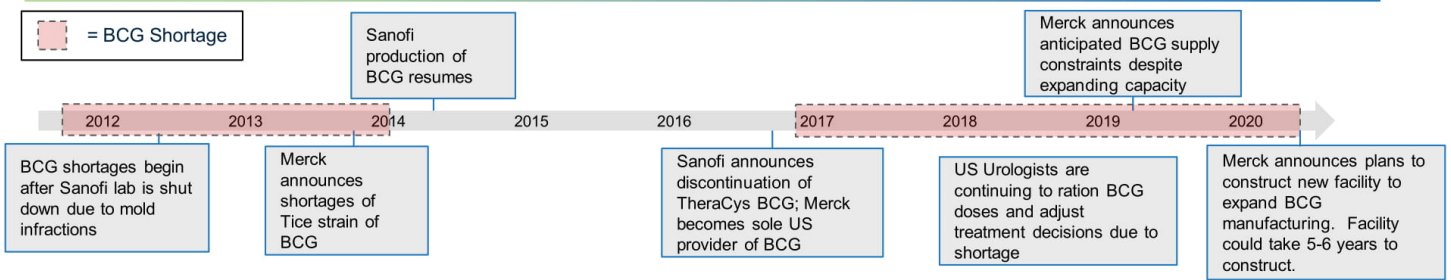


Was generally well-tolerated, with safety and tolerability observed across a range of doses



Demonstrated treatment effect and lower rates of recurrence vs. control group, including in the randomized, controlled setting

# BCG Shortage Causes Significant Impact on Care



**Shortage has prompted major urological associations to issue guidance on patient management <sup>(1)</sup>**

“...remain extremely concerned about this shortage and its effects on the care of bladder cancer patients...”  
 -Joint Statement on BCG Shortage, Feb 2019

**Dose rationing and resorting to less desirable treatment options are impacting patient care<sup>(2)</sup>**

“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**



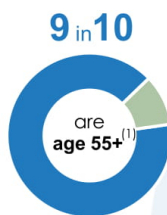
(1) AUA/SUO Joint Guideline: Published 2016; Amended 2020  
 (2) Market Research Conducted by Protara Therapeutics

# NMIBC Represents the Most Common Form of Bladder Cancer

## Bladder Cancer in the US

**6<sup>th</sup>**   
**most prevalent cancer** in the U.S. <sup>(1)</sup>

**4x**  
more likely to be diagnosed  
in **men** <sup>(2)</sup>




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

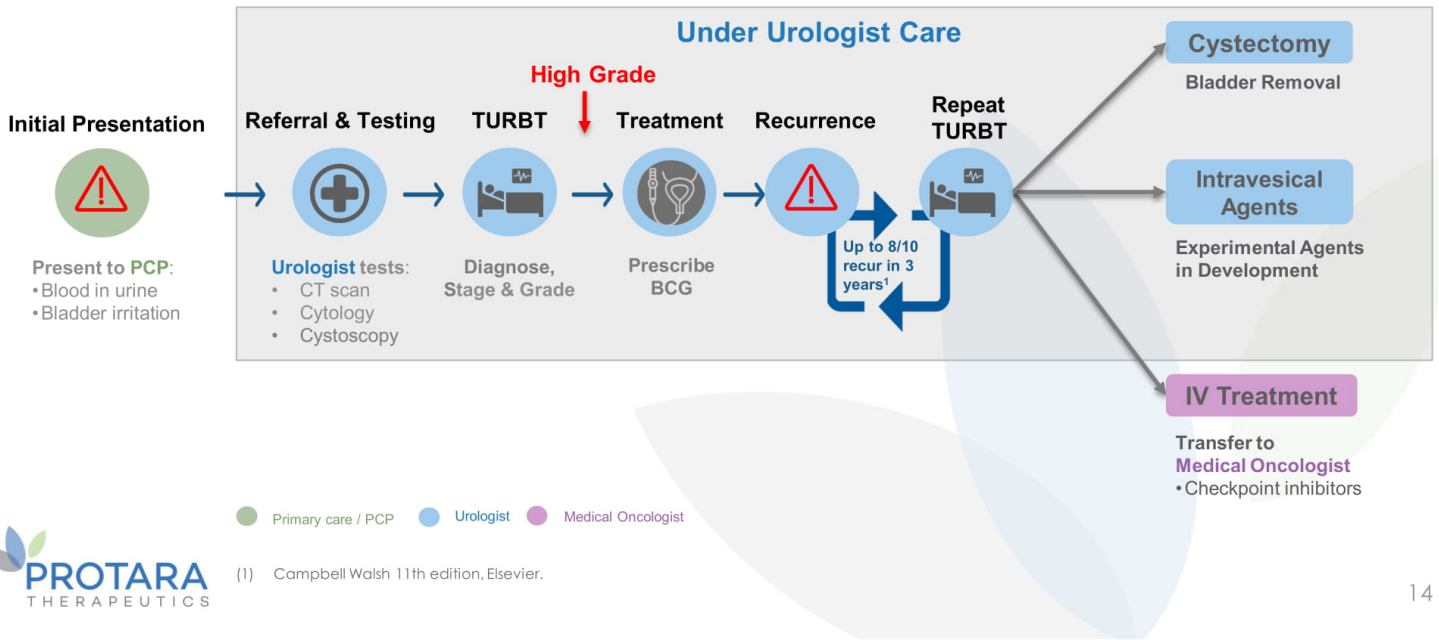
**NMIBC** makes up  
**~80%** of all bladder  
cancer with **~65,000**  
**diagnosed per**  
**year** in the U.S. <sup>(4)</sup>

NMIBC patients  
are treated by  
a **urologist** 

**Significant increase in  
recurrence, progression**  
& an escalated number  
of patients needing  
**cystectomies** <sup>(5)</sup>



# Current Standard of Care Highlights High Unmet Need for Patients

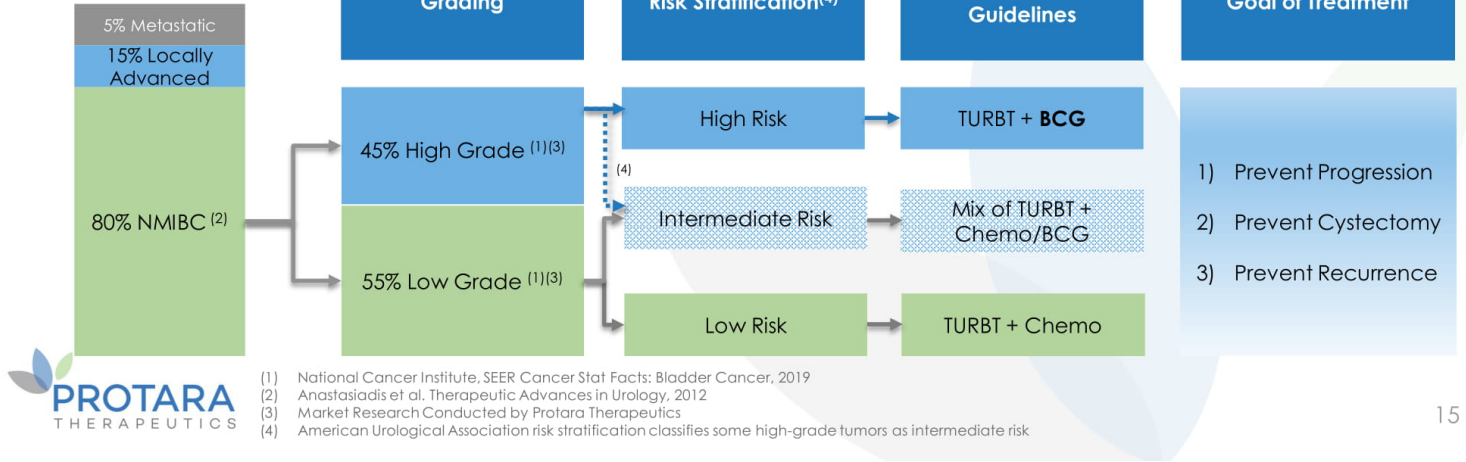


# TARA-002 in NMIBC: Overview of U.S. NMIBC & Target Population

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

**Initial Protara targeted incident patient population:  
~30K<sup>(1)(2)(3)</sup> Patients with High Grade NMIBC who are candidates for immunotherapy**

80K Patients Diagnosed with Bladder Cancer Annually<sup>(1)</sup>  
65K Patients with NMIBC<sup>(2)</sup>



# TARA-002

LYMPHATIC MALFORMATIONS (LMS)



## TARA-002 in LMs

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### Lymphatic Malformations

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



### Epidemiology

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



### Current Treatment Options

Current treatment options include surgical excision with high complication (33%) and recurrence (55%) rates<sup>(3)</sup> 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<sup>(3)</sup>



(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.

## TARA-002 in LMs: Regulatory Path

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- 1 Completed Phase 2 study of OK-432 in U.S. supports treatment effect with support for strong safety profile
- 2 In April 2021, received feedback from FDA requesting additional clinical work to evaluate the safety and efficacy of TARA-002 in LMs
- 3 Plan to complete confirmatory large scale GMP manufacturing comparability and update IND with this information
- 4 Plan to initiate clinical study in pediatric LMs patients following alignment with FDA on study design



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



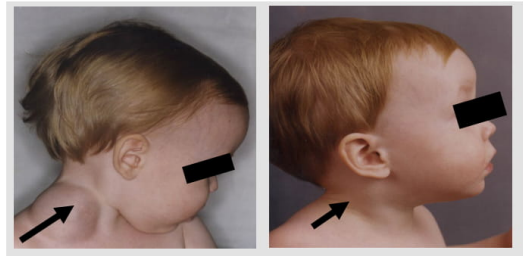
Before

After



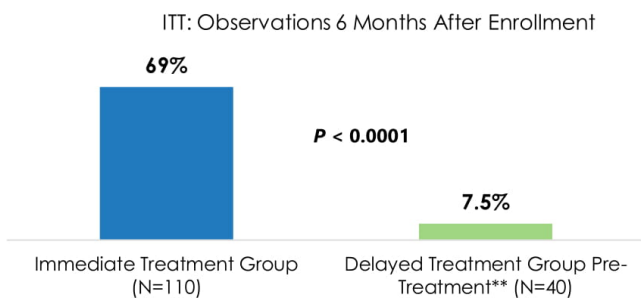
Before

After

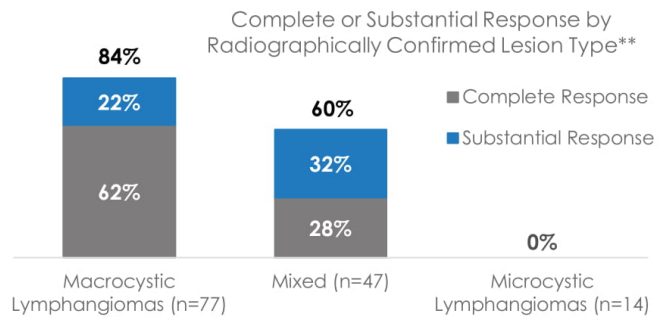


# OK-432 in LMs: Robust Results of Completed Phase 2 Study<sup>(1)</sup> in U.S.

## 69% CLINICAL SUCCESS<sup>†</sup> IN IMMEDIATE TREATMENT GROUP 6 MONTHS AFTER ENROLLMENT



## 84%\* CLINICAL SUCCESS<sup>†</sup> IN PATIENTS WITH MACROCYSTIC LESION TYPES



- 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)

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



<sup>†</sup>Clinical Success was defined as complete or substantial response

<sup>\*</sup>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

<sup>\*\*</sup>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

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### **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)

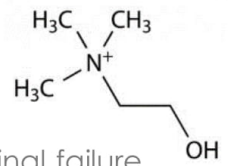


## IV Choline in IFALD: Late-stage Opportunity for an Unmet Medical Need



### An Essential Molecule in Several Metabolic Processes

Patients dependent on Parenteral Nutrition (PN) cannot absorb sufficient levels of choline. Data confirms that choline deficient diets results in steatosis and cholestasis<sup>(1)</sup>



### Clinical History Supporting Choline Substrate Replacement in IFALD (intestinal failure associated liver disease) Patients

A Phase 2 study demonstrated the clinical potential of choline substrate replacement therapy by reversing certain hallmark pathologies of IFALD<sup>(1)</sup>



### Strong Market Opportunity with Potential to Expand Addressable Patients

Prevalence of patients on PN 79/million<sup>(2)</sup>; recent Medicare diagnosis data suggests  $\approx$  5,000 IFALD patients<sup>(3)</sup>

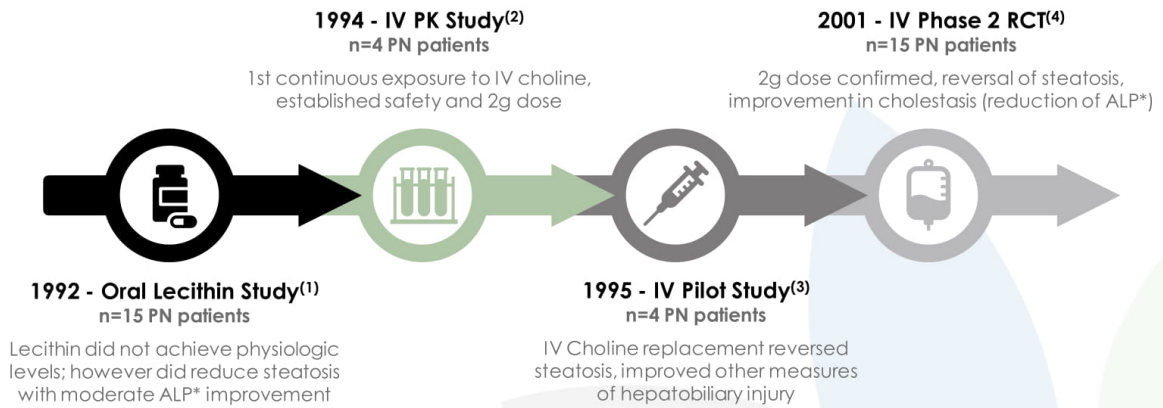


### Clear Regulatory and Clinical Path Forward

FDA designations (Orphan Drug Designation, Fast Track Designation) combined with encouraging feedback from End of Phase 2 meeting for Phase 1 PK study followed by Phase 3 trial

# 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 <sup>(1)</sup> |                                                              |
|--------------------------------------------------------------|--------------------------------------------------------------|
| 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<br>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 proof-of-concept, 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 parenteral nutrition (PN)

# IV Choline in IFALD : Phase 2 Results

## Improvement in Steatosis and Cholestasis

### CLINICALLY MEANINGFUL IMPROVEMENT IN STEATOSIS

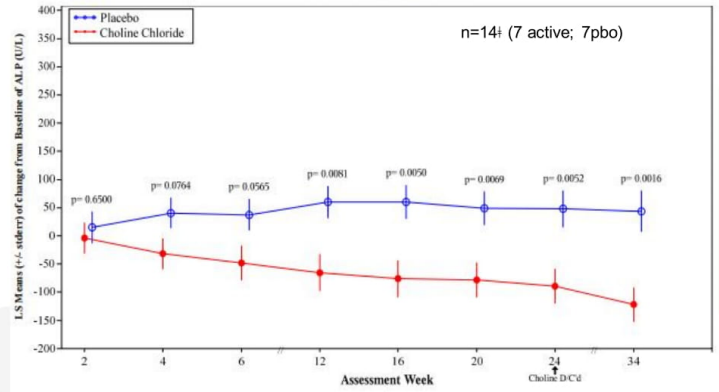
At Baseline



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



## IV Choline in IFALD: Prevalence Study

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**Prevalence study** underway 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 presence/incidence of liver disease in this population to enhance value of development potential

**QUESTIONS**

How many individuals currently on service have been dependent on PN for 6 or more months?  
What percentage of these have elevated ALP levels ( $> 1.5x$  ULN) as an indicator of liver disease?

# Summary



## Building Momentum in 2021

|                                                            |                                                                                                                                                                                                                                                                     |
|------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>LMs:</b><br>Rare Disease Opportunity                    | <ul style="list-style-type: none"><li>● 2H'21: Complete confirmatory GMP scale up and comparability</li><li>● 2H'21: Agree with FDA on design of additional clinical study</li><li>● 2H'21: File for Breakthrough Therapy Designation / Fast Track Status</li></ul> |
| <b>NMIBC:</b><br>Significant Market Potential              | <ul style="list-style-type: none"><li>● 1H'21: Complete nonclinical studies (tox, MOA, immunogenicity)</li><li>● 2H'21: File IND</li><li>● Late 2021: Initiate Phase 1 study*</li></ul>                                                                             |
| <b>IV Choline:</b><br>Late-Stage Pipeline Opportunity      | <ul style="list-style-type: none"><li>● 2H'21: Complete prevalence study to better characterize epidemiology of IFALD</li></ul>                                                                                                                                     |
| <b>Financials:</b><br>Estimated funding through early 2023 | <ul style="list-style-type: none"><li>● \$169M as of December 31, 2020</li><li>● 19.2M Common Share Equivalents: 11.2M Common + 8.0M Preferred on as-converted basis as of December 31, 2020</li></ul>                                                              |

\*Subject to acceptance of IND filing



# Corporate Presentation

April 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

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Chemical structures and diagrams are visible in the background of this section.