"Danger Will Robinson!" – Intra-Cellular Therapies Stock Soars While Key Clinical Data Not Presented to Shareholders Looks Highly Disappointing

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Since January 1st, 2011 the biotech market has had an epic run. The IBB, an ETF that most believe is an excellent proxy for the industry, has run from 93 to 365. That's an almost 400% rise in less than 5 years. We at Little Bear have ridden the coattails of numerous small and micro- cap biotech stocks whose products have literally gone from scribblings on a chalkboard to saving lives. There is no doubt that much of the gains have been well-deserved.

But amidst the fervor in the industry, where start-ups have gone from family funding to publically traded billion-dollar market-caps, there exists a few companies whose management has taken advantage of the speculative buying to raise large sums of cash for dubious endeavors. We believe that in the race to find the next BioMarin or Vertex Pharmaceuticals, investors have overlooked significant **red flags**.

In our opinion, there's no more egregious biotech investment where investors are ignoring all the warning signs than **Intra-Cellular Therapies, Inc. ("ITCI")** and its lead compound **ITI-007,** originally billed as a sleep-aid but currently under development to treat schizophrenia. We've found negative data being hidden from investors, a drug sold by a savvy big-pharma to ITCI for a pittance, questionable trial metrics and pharmacodynamic properties for the lead compound that call into question whether or not this drug will ever find widespread adoption if it even works at all.

Read on for the story behind Intra-Cellular and the numerous red flags that not a **single Wall Street firm** covering the stock took the time to warn its' clients of…

- ITI-007 is at least a decade-old drug; Intra-Cellular purchased it from Bristol Myers in May of 2005 for an upfront payment of only **$1 million[1].** Bristol Myers launched the antipsychotic Abilify in 2009 (co-owned with Otsuka); last year's sales exceeded $5 billion making it one of the highest selling drugs **ever**. It's now generic and Bristol is in need of a follow up branded product. With Bristol's knowledge of the anti-psychotic market well-established and Abilify patent expiration known, why would it have sold ITI-007 in the first place for such a pittance if it had the possibility of being another anti-psychotic blockbuster? **Perhaps the reason is simple – Bristol believed at the time it sold it that ITI-007 had limited antipsychotic potential???**

- Intra-Cellular Completed a Phase II Study in schizophrenia for ITI-007 in **November 2013[2]**. To date – more than 18 months later - Intra-Cellular **has yet to FULLY PUBLISH the data from the study in a peer-reviewed journal**. Further, the results have not even been provided to the public on the trials' clinicalTrials.gov entry – yet management has consistently teased out small samples and 'ad hoc' analysis of the trial**. What details lie within the full data set that management of ITCI is in no rush to share with investors??**

- Since the announcement of **only 'Top-line' data** from the study on December 9th, 2013, Intra-Cellular has uplisted on to the Nasdaq, and raised more than **$240 million** – all the while the public has been **in the dark** as to the **full results** of the Phase II study!

[1] See 2014 10-K : http://www.sec.gov/Archives/edgar/data/1567514/000119312515089426/d857051d10k.htm
[2] See ClinicalTrials.gov entry : https://clinicaltrials.gov/ct2/show/study/NCT01499563?term=ITI-007&rank=1
Entitled "Study of a Novel Antipsychotic ITI-007 in Schizophrenia"

- Disclosed within Intra-Cellular's corporate presentations[3] published since December 2013, the company summarizes what it believes to be the key findings from the study. However, in management's own presentations it omits **key clinical data released by ITCI at an industry conference that we believe is necessary for its own investors to correctly ascertain the true efficacy of the drug!**

- Since discovering this **key omission**, we contacted both the company's management and its investor relations firm and requested that they provide Little Bear this key clinical data. To date, both the company and its IR firm have **refused to do so –** although we were finally able to track down this information from someone with a digital copy of the poster presentation.

- Using this key clinical data (**to reiterate – data not available on ITCI's Corporate Presentation BUT was presented at a conference by ITCI management)** we completed our own exhaustive analysis comparing ITI-007 to various competing or failed drugs in recently published schizophrenia trials. **When compared to existing branded & off-branded drugs as well as failed antipsychotics ITI-007's purported efficacy in treating schizophrenia patients is extremely disappointing**.

- Even the top-line data ITCI does present to its shareholders shows a very disconcerting **lack of a dose response**. In psychiatric therapeutic treatment this is a **huge red flag**. In the single Phase II study, the 120mg dose **flat out failed.** ITCI would have you believe that a 60 mg dose of ITI-007 is as efficacious as risperidone but a two-fold higher dose was **no better than a placebo –** and that this

[3] See Link here : http://files.shareholder.com/downloads/AMDA-2O83FW/349740192x0x742354/A5636931-FDFE-4CAD-BA6A-0D30CCDFC235/ITI_Corporate_Presentation.pdf

is A-OK. In reality, our survey of anti-psychotic drug trials from the past 5 years found that the efficacy of most drugs **flattens out** at the higher end of the dose range - where more drug in general produces slightly better results than lower doses **but in no way do high doses fail to outperform a placebo**. Bulls believe ITI-007 would have to be the **one antipsychotic where a little bit of drug helps the patient but increasing the dose is no better than taking a placebo. As we like to say often at Little Bear : C'mon !**

- The ITI-007 Phase II study was an **outlier in both** the baseline PANSS scores (an industry standard method of assessing an antipsychotic drug's efficacy) **and** the PANSS reduction for the well-known and oft-used active control risperidone. This calls into question **whether or not this trial was truly run properly in the first place and if the results can even be relied upon.**

- Management wants you to believe ITI-007's differentiated mechanisms of action could lead to a better safety and side effect profile. However there are a number of atypical drugs currently on the market that have **better proven reductions in psychotic symptoms than ITI-007 with similarly improved side effects**. In short, even if ITI-007 does get FDA approval it will face a cluttered price-sensitive market with far better choices both branded and generic including a once monthly injectable version of Abilify.

- We believe that when investors examine the key clinical data ITCI didn't want Little Bear to see, they will realize ITI-007 is likely to be proven inferior to **existing anti-psychotic drugs if it is ever proven to work at all**. In short, for its $1.2b market cap investors are assuming Intra-Cellular has a winner on its hands - when we believe **the facts point in all likelihood to ITI-007 being a dud!**

Intra-Cellular's Rapid Rise Is Based Upon Investor's Confidence in the Potential Therapeutic Application(s) of ITI-007

Intra-Cellular's CEO Dr. Sharon Mates founded the company in 2002 and licensed its lead candidate ITI-007 from Bristol Myers in May of 2005 for an upfront payment of $1m, followed by slightly more than $2m in milestone payments since then. After completing a 335-patient Phase II study, the company executed a 'reverse-merger' in September 2013 alongside a $60 million private placement at approx. $3 per share. The investors undoubtedly had seen the top-line results of the recently completed Phase II study and felt comfortable with the $3 per share valuation as they committed $60 million, which in the pantheon of reverse mergers is quite a hefty sum to close on.

Once the 'Top-line' data from the Phase II was released to the rest of the investing public the newly-traded stock started to soar. At the end of January trading in ITCI stock was so robust that the company completed an additional 6.1 million share offering at $17.50 per share and uplisted to the Nasdaq.

There has been no major additional clinical data released to the public since the Phase II study. Yet the stock has climbed from the $3 reverse-merger offering price to over $35 today! Investors need to ask themselves whether or not the increase in value is warranted. We believe the facts point to the obvious answer – **No.** Here's why:

You cannot gauge a drug's efficacy without knowing the baseline severity of illness of the patients in the study!

ITCI bulls will tell you that the top line results prove that ITI-007 at a 60mg dose performed better than placebo, and just as well as the active control, Risperidone (Risperdal), which is one of the 'gold standards' in psychiatric treatment. HOWEVER, investors should ask the following question : Granted the company disclosed the gross decrease in PANSS score for patients, but what was the **percentage decrease** and how does that **compare to other anti-psychotics either on the market or in the pipeline?**

The percentage PANSS score reduction is an **industry standard** method of assessing an antipsychotic drug's efficacy. A patient's PANSS score is derived from 30 items each scored 1 through 7. A score of 30 is the minimum score which of course indicates no symptoms of schizophrenia. Markedly ill patients will score in the high 80's to mid 90's and above. Therefore, it is important to know **the percentage decrease from the starting – or 'baseline' – PANSS score of a patient at the conclusion of the trial.**

According to a recent paper published by noted researcher Stefan Leucht, a PANSS reduction in the range of **19 – 28 %** is considered "**minimally improved**" (J Clin Psychiatry 2014; 75 supplement 1). As we discovered after doing the math, the 60 mg dose in the ITI-007 Phase II study clocked in at a disappointing **23% !!!**[4]

[4] See Appendix A for all the raw data on our analysis of the % Reduction in PANSS Scores

How did we calculate a 23% Reduction in PANSS for 60mg ITI-007 ???

When drug companies report data from a trial of a new, proposed anti-psychotic drug the industry standard is to **always include** the following data: (a) Starting, or 'baseline' PANSS score of both the treated and placebo patient population; (b) the average PANSS score reduction after 4 or, more commonly, 6 weeks of treatment; (c) the percentage decrease in PANSS scores over time, defined as :

[Avg PANSS Reduction] / [Avg Baseline PANSS - 30] x 100 = % PANSS Decrease

ITI-007 60mg -13.2 88.1 - 30 x 100 = **22.7 %**

The only way to **truly know** how well ITI-007 performed compared to other antipsychotics is to know the baseline PANSS score of the patients at the start of the trial and use that to calculate % Reduction in PANSS. Pretty basic stuff – **except for the fact** that ITCI hasn't released this information directly to its shareholders – not in the initial press release on the Ph II data, not in any shareholder presentation we have seen, and certainly not in the most recent June 2015 corporate presentation.

Knowing the baseline PANSS score and therefore the % reduction of the patients in Phase II is **critical to being able to compare ITI-007 to other antipsychotics.** You would think ITCI would want its shareholders to know just how well ITI-007 has performed when compared to all the other antipsychotics currently on the market.

We reviewed all the current published analyst research we could get our hands on – that included coverage from Leerink, Cowen, JMP & Suntrust. **Not a single analyst report we reviewed – and we went back almost a year for each one of these firms – discussed what the starting PANSS score was, and none of them compared the percentage PANSS score reduction to other marketed antipsychotics!**

Stunned, we reached out to Intra-Cellular's PR firm, Burns McClellan. After two emails requesting the PANSS baseline data went unanswered, we called and spoke with the firm. Again, we were given the runaround and ignored. We then followed up with an email to the VP of Clinical Development, Dr. Kimberly Vanover, who had presented the data from the Phase II trial at a conference in May 2014[5] -- a poster presentation that ITCI was pleased enough with that it issued a press release informing its shareholders[6]. Again, Dr. Vanover herself ignored us. We finally reached out to a colleague in the industry who had attended the presentation and provided us with a PDF file of the poster[7].

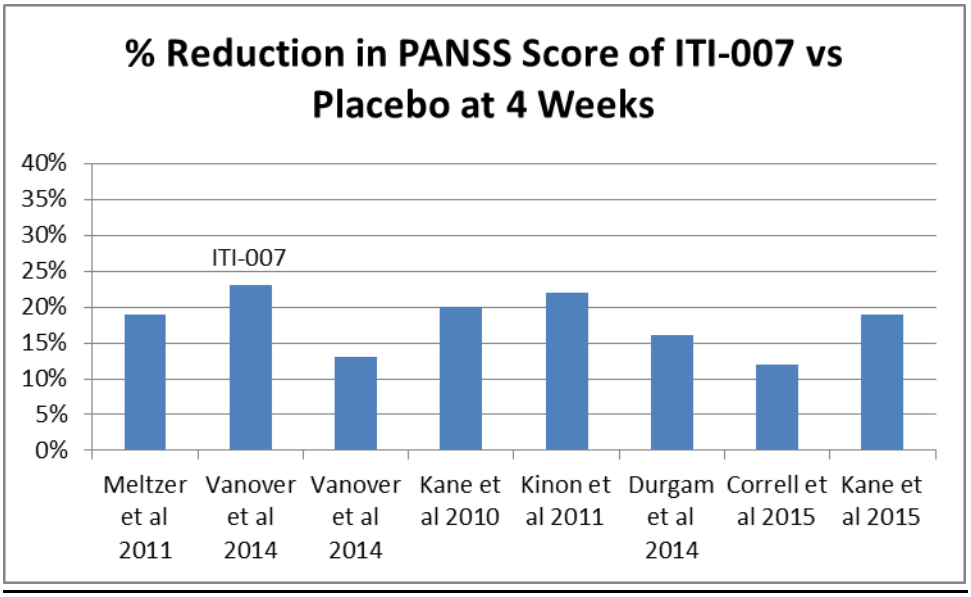
Lo and behold, the baseline PANSS scores for both the treated, active & control arms were all disclosed on the poster. And just like we suspected, there is a good reason why the company didn't want shareholders to see this data – **it shows that the Phase II result of a 23% PANSS score reduction for 60mg ITI-007 is one of the weakest antipsychotic results around --- even when compared to placebos and failed drugs let alone established therapies!**

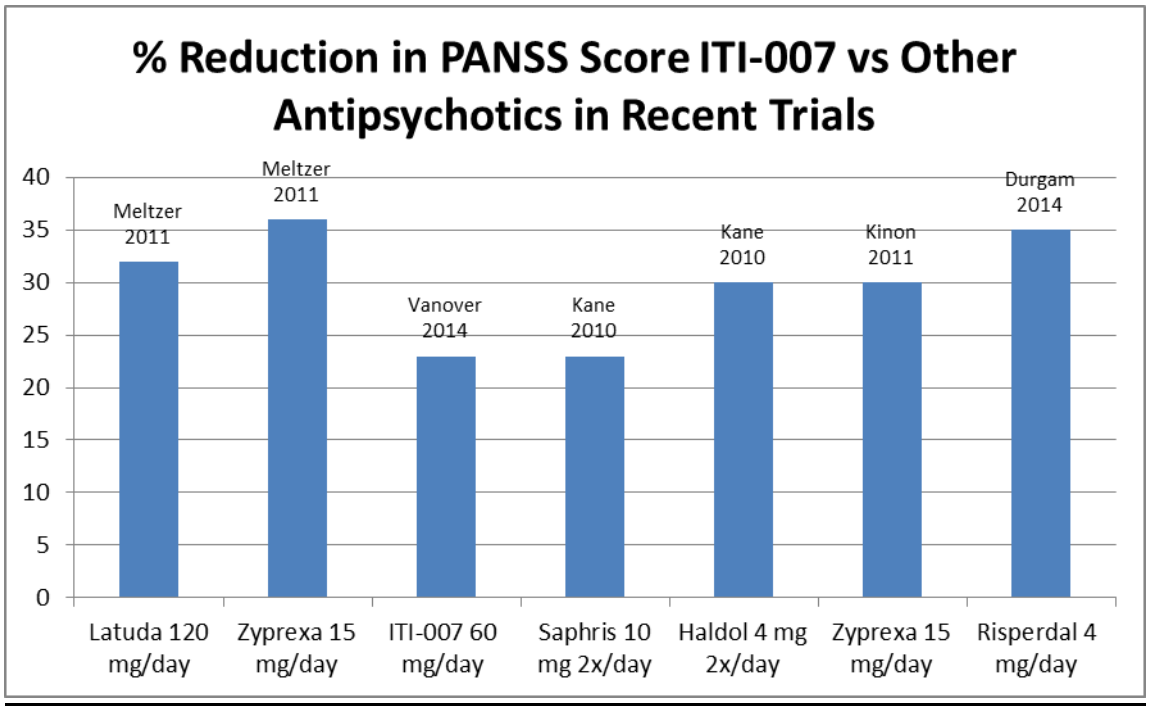
One look at the following three charts and ITI-007's **subpar** therapeutic performance **becomes obvious** to even the most non-technical of readers:

[5] Poster NR8-173: "ITI-007 for the Treatment of Schizophrenia: A Randomized, Double-Blind, Placebo- and Active-Controlled Phase 2 Trial". Kimberly E. Vanover, et al. Presented Tuesday, May 6 from 2:30 P.M. to 4:00 P.M. EDT.

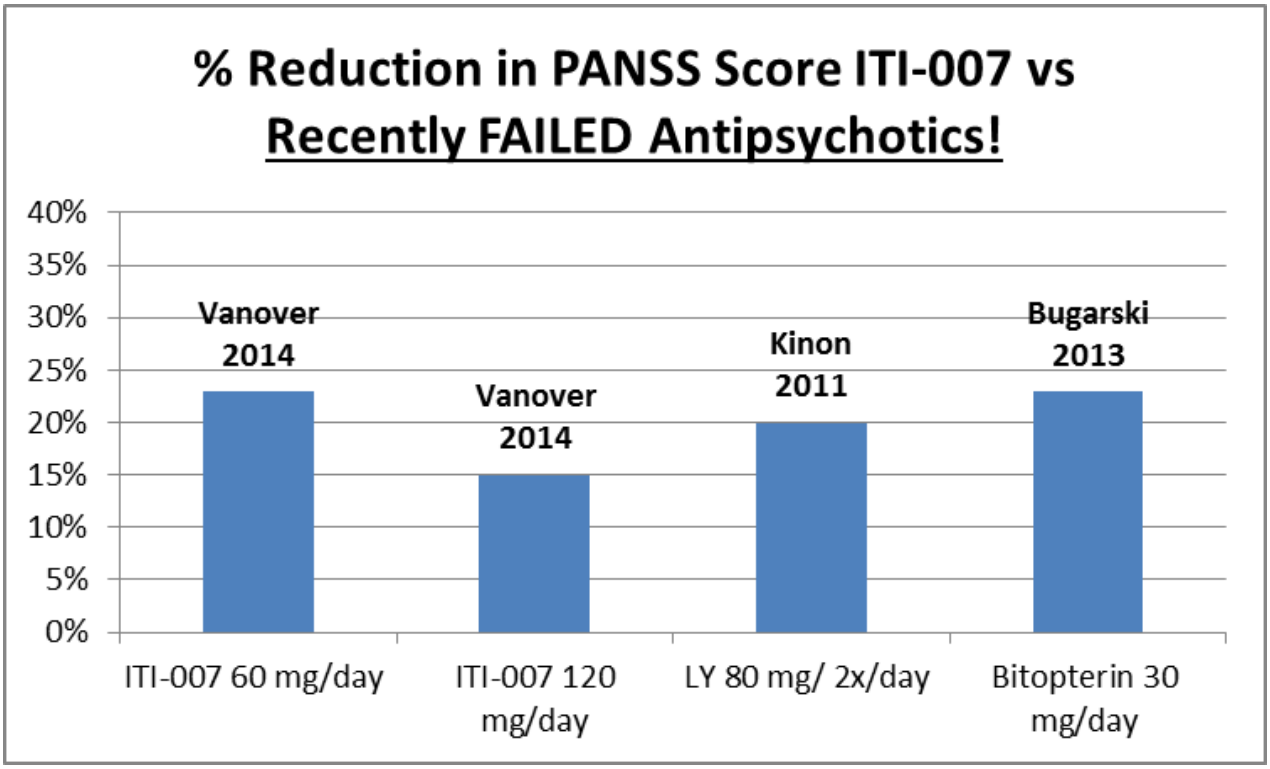
[6] ITCI put out a press release regarding the presentation – but never released a copy of the actual poster! See Link to ITCI Press Release : http://www.intracellulartherapies.com/press-room/press-releases/10-press-releases/68-may-6-2014.html

[7] Since ITCI has not publically released this poster on its' website we cannot in good faith publish a copy here since we do not have license to do so. However, we strongly feel that **all** material information – including scientific data presented at conference - should not be **selectively disclosed only to attendees.** Therefore we urge all ITCI shareholders to contact the company and request a copy of the Phase II poster be sent to them.



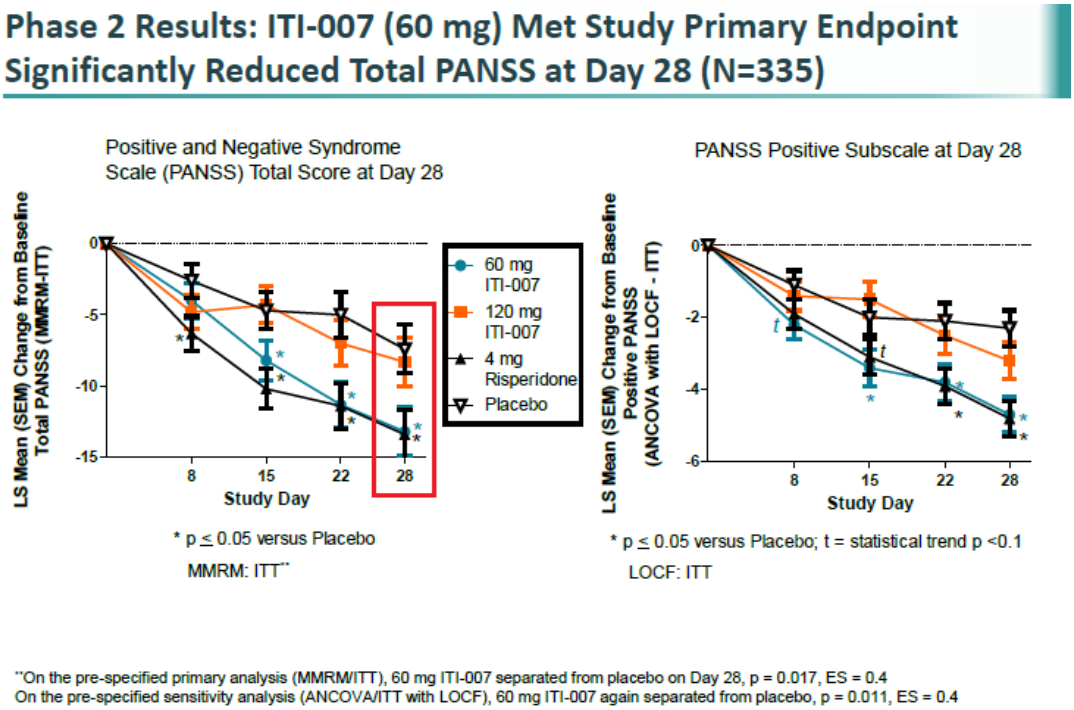


Totally Subpar!!



Looking at the above charts, its' not hard to see why Intra-Cellular doesn't disseminate the Phase II baseline PANSS scores or the percentage PANSS decrease in their corporate presentations – it's because compared to the competition ITI-007 is **dead last** and BARELY beats the placebo arm **OR EVEN** two failed drugs that, just like ITI-007, showed signs of efficacy in early stages only to fail later pivotal trials.

Were the Phase 2 Results of ITI-007 Active Control an Outlier? Does Suspect Data Make ITI-007 Look Better than It Really is??



Reviewing the above data (source: ITCI Corporate Presentation, June 2015) we found it odd that risperidone performed so poorly in the active control arm only reducing the overall PANSS by **24%** from a baseline of 86.1, basically matching the ITI-007 **23%** reduction and making ITI-007 look at least as efficacious as this widely prescribed drug. We believe the performance of risperidone as an active control in this study is **well below** what would **normally be expected** based on the previously cited works in which other active controls including risperidone consistently reduced PANSS scores by **30-35%** after 4 weeks of treatment. **We believe it is dangerous for investors to conclude that ITI-007 is as effective as risperidone based on this study as there is a high probability the results are anomalous[8].**

[8] At a speech in April, Dr. Vanover commented that an ad hoc analysis of a subgroup of patients with depression had PANSS score reduction of "close to 50%". Depending on the size of that subgroup, that would imply the non-depressed cohort performed **much worse than 23% and far less efficacious than Risperidone! (**Source: http://www.medscape.com/viewarticle/842591)

ITI-007 and the market potential in Behavioral Disturbances Associated with Dementia & Alzheimer's Disease.

"Beyond development of high-dose ITI-007, successful development of low-dose ITI-007 as a safe treatment option for behavioral disturbances in dementia patients could add another blockbuster treatment opportunity for ITI-007." – Leerink Analyst Seamus Fernandez, 5/1/15

We believe the market is overestimating the potential of ITI-007 in this space based on very limited data provided by the company from a 35 patient study as well as overzealous comments made by analysts. Investors must understand that the FDA has placed a Black Box warning in the product labeling of antipsychotics that states:

"Elderly Patients with dementia- related psychosis treated with antipsychotic drugs are at an increased risk of death. Analyses of 17 placebo controlled studies (modal duration of 10 weeks), largely in patients taking atypical antipsychotic drugs, revealed a risk of death in drug treated patients of between 1.6 to 1.7 times the risk of death in placebo treated patients. Over the course of a typical 10-week controlled trial, the rate of death in drug treated patients was 4.5% compared to a rate of 2.6% in the placebo group" (Source: Abilify Prescribing Info revised 2-2012) **Even the newly approved Brexpiprazole (Rexulti) which has only been FDA approved for a few days carries this same warning**.

It is **inconceivable** that the FDA will award any antipsychotic a specific indication in dementia or Alzheimer's related psychosis without the completion of a large, expensive, and lengthy trial. We believe that investors are not being told the entire story about the potential for **toxicity** from ITI-007 in elderly patients and will demonstrate this using a chart from ITCI's investor presentation (see next page, below)

ITI-007: Unique Pharmacologic Profile Compared to Approved Antipsychotics

	ITI-007	Clozapine	Abilify™	Geodon™	Latuda™	Risperdal™	Seroquel™	Zyprexa™
Mediators of Efficacy								
5-HT_{2A} Antagonism	●	●	●	●	●	●	◑	●
D_2/5-HT_{2A} Affinity Ratio	59	20	0.2	18	0.8	12	2	12
D_2 Receptor	Pre-synaptic partial agonist & post-synaptic antagonist	Pre- & Post-synaptic antagonist	Pre- & Post-synaptic partial agonist	Pre- & Post-synaptic antagonist	Pre- & Post-synaptic antagonist	Pre- & Post-synaptic antagonist	Pre- & Post-synaptic antagonist	Pre- & Post-synaptic antagonist
SERT	●	NO	◑	NO	NO	NO	NO	NO
Indirect Glutamate (D_1/$GluN_{2B}$)	●	●	NO	NO	NO	NO	NO	NO
Mediators of Side Effects								
H_1 Antagonism	NO	●	●	●	NO	●	●	●
Muscarinic Antagonism	NO	●	NO	NO	NO	NO	●	●

● = Strong Affinity ◑ = Weak Affinity

(Source : Corporate Presentation, June 2015)

Notice ITCI points out that ITI-007 has no H_1 or muscarinic antagonism and that these receptors are mediators of side effects. Conspicuously absent from this section is **any mention of alpha$_1$ receptor** antagonism. Alpha$_1$ receptor antagonism is a **common problem** with many antipsychotics including clozapine, risperidone, olanzapine, quetiapine, and others and results in low blood pressure upon standing that can cause a side effect called **syncope** which put simply is dizziness, falling down, or fainting.

This is an important side effect particularly in elderly patients; so much so that the American Geriatric Society Beer's Criteria list of medications that may be inappropriate in older adults includes olanzapine as a

medication that should be avoided when syncope is a concern because it "increases risk of orthostatic hypotension"[9].

This fact is extremely critical for investors in ITCI because ITI-007's affinity for the alpha$_1$ receptor is **similar to olanzapine's** based on a recent paper published by Snyder et al in Psychopharmacology 2015; 232: 606-621 in which Kimberly Vanover (ITCI VP of Clinical Development) and Sharon Mates (ITCI President & CEO) are listed as co-authors**.**

We've spoken with a number of shareholders and analysts in ITCI. The excitement surrounding ITI-007 as a potential therapy in this market we believe has had an outsized impact on investor's appetite in recently pushing the stock into the $1b+ range. BUT… The evidence to date points towards ITI-007 having **little shot of ever becoming** a safe treatment within the elderly population.

The bottom line: Investors need to realize that ITI-007 will not be a slam dunk for any indication in elderly patients. The FDA will need a whole host of safety data on ITI-007 in the elderly and given its similarities to olanzapine described above and omitted from the investor presentation that won't be an easy path. Ascribing ANY value to the share price of ITCI for this indication is premature and requires one to ignore the preponderance of evidence to the contrary.

[9] See the link http://www.americangeriatrics.org/files/documents/beers/2012AGSBeersCriteriaCitations.pdf

Why Did Bristol-Myers Not Develop ITI-007 On Their Own?

As we've researched this piece one nagging question has constantly bothered us: **Why did BMY choose to not develop the blockbuster antipsychotic that ITCI bulls believe is poised to revolutionize schizophrenia treatment with multiple complementary mechanisms?**

While we can only speculate, there are a number of recently uncovered facts about ITI-007 that point to a potential answer. It's our belief that a possible answer lies buried in a paper recently published online - ahead of print - by Robert Davis et al in Psychopharmacology 2015 DOI 10.1007/s00213-015-3922-1.

This paper discussed the dopamine (D2) and serotonin (5HT2A) receptor binding profile of ITI-007 as characterized in a 16 person healthy volunteer study using Positron Emission Tomography (PET) scanning and single doses of ITI-007 up to 40 mg. It is important to note that the only successful antipsychotics to date antagonize the D2 receptor to some degree (even partial agonists) and most of them require doses that result in net occupancy of **70-80%** of D2 receptors in vivo including - clozapine. (Seeman et al Molecular Psychiatry 1998; 3: 123-134).[10]

According to the aforementioned 2015 paper by Davis et al, the mean D2 receptor occupancy of a 40 mg dose of ITI-007 was only **28.7%** with the highest observed rate of D2 occupancy of **38.8%** 30-60 minutes post dose. Further, after only **5 to 7.5 hours** the D2 receptor occupancy fell off to a mean of **13.8%** and the highest recorded value was **17.5%**. These figures are **far lower** than those of risperidone (est max 93% & 24 hour min 40%) and olanzapine (est max 100% & 24 hour min 50%) (Catafau, AM et al. J Psychopharmacology 2008; 22(8): 882-894) – as

[10] "Antipsychotic drugs, when given at clinically effective doses, generally occupy between 70% and 80% of brain dopamine D2 receptors in patients as measured in the human striatum"

noted above, (Seeman et al) virtually every successful antipsychotic falls in the range of 70-80% peak D2 occupancy or higher !!

These data highly suggest that ITI-007 may **have little to no D2 occupancy only halfway through** its once daily dosing interval -- and much like ziprasidone or quetiapine which have similar rapid dissociation from the D2 receptor should be **dosed twice daily**.

	Mean Peak D2 Occupancy	**Occupancy Half Life**	**Dosing**
ITI-007	28.8%	Approx. 6.5 hours	Daily
Quetiapine IR	50%	Approx. 6 hours	Twice Daily
Ziprasidone	69.7%	8.3 hours	Twice Daily

Robert Davis et al. Psychopharmacology 2015 DOI 10.1007/s00213-015-3922-1
Nord, M et al. Int J Neuropsychopharm. 2011; 14:1357-1366
Suzuki, T et al. Psychopharmacology (Berl) 2013; 228 (1) 43-51

Unfortunately, the current Phase III ITI-007 trial is not designed that way as ITCI is sticking with a **once a day** dosing regimen[11]. Based on currently accepted theories about how antipsychotics work ITI-007 **may not be a robust antipsychotic from** a pharmacokinetic or pharmacodynamic standpoint **especially when dosed once a day**.

In order for one to dismiss our findings and believe that ITI-007 is still a potent antipsychotic then one must believe that the effects of the drug at 5HT2A and or glutamate receptors is enough to overcome these limitations. The problem with is that it hasn't worked for other drugs that failed! **Ritanserin**, a potent 5HT2A antagonist with no significant D2 antagonism never demonstrated a robust antipsychotic effect. Eli Lilly poured tens of millions into **LY2140023**, a purported modulator of brain glutamatergic pathways, before coming to the conclusion that it too never demonstrated any robust efficacy.

[11] We at Little Bear were extremely puzzled by this insistence of ITCI's management in pursuing a once-a-day regime given the available pharmacokinetic data. We are only left with two conclusions: either management has additional D2 receptor data that they haven't shared, or (more likely) the once-a-day regimen was chosen for its easier marketability to a patient population that has historically shown significant issues with compliance.

Lastly, like ITI-007 ziprasidone is also a reuptake inhibitor of serotonin (as well as norepinephrine) (Stahl, Stephen M Psychopharmacology of Antipsychotics 1999; page 88), a fact **totally ignored and not mentioned whatsoever** in ITCI's investor presentation -- for good reason: Despite this extra pharmacological "advantage" ziprasidone was shown to be **no better** than its peers in arguably the most important antipsychotic trial ever conducted, the CATIE trial. (Lieberman JA, et al N Engl J Med 2005; 353: 1209-1223)

All thats left then, is ITI-007's relatively low and short-lived occupancy at D2 receptors which is something that **BMY likely knew about when it chose to sell this molecule.** Indeed, the reduction in PANSS scores of only 23% by 60 mg of ITI-007 in the Phase 2 study fall into the range of 19-28% which is considered "**minimally improved**"[12] while the 120 mg dose was no better than placebo. Plenty of drugs on the market have been proven to reduce PANSS by more than 30% and its extremely hard to see why seriously ill patients will be prescribed an inferior drug in large numbers.

Taken together, these findings strongly suggest that the antipsychotic effects observed in ITCI's phase 2 study are **simply placebo effects or the signs of a relatively weak drug -- and therefore the subsequent Phase III readouts have a very high risk of failure.**

[12] Again, the industry standard here is the paper in J Clin Psychiatry (2014; 75 supplement 1) which clearly states that a PANSS reduction in the range of 19 – 28 % is considered "minimally improved"

So… What's Intra-Cellular Worth to Its' Shareholders?

We think there is no more than a 50/50 chance that ITI-007 conclusively beats the placebo in either one of the two ongoing Phase III studies. However, even if the drug does hit statistical significance in doing so, unless the % PANSS score decrease is in the 30 – 35% range, we believe the existing marketplace for approved anti-psychotics is such that ITI-007 will end up having a very small slice of the overall pie. With so many other drugs on the market with better efficacy, historically poorly performing drugs such as ITI-007 rarely get prescribed.

Suntrust analyst Edward Nash estimates the future price of an approved ITI-007 to be $8,500 per year[13]. We think that's extremely optimistic - consider that Abilify, a much better drug with far better PANSS score decreases, is now off patent and available as a generic for as little as $370/mo at Walgreens. And that's the retail price; most insurance companies reimburse far less than the sticker price.

As we've stated numerous times, the risk of failure in the Phase III is extremely high. But even if the drug beats the placebo and gets approved, we don't believe ITI-007 can crack more than $400 million in a **best-case scenario** given its' low PANSS scores. Unless the new readouts show a vast improvement over the 23% Phase II reduction in PANSS scores from the phase 2 this drug is relegated to the dustbin.

Using Suntrust's $8500/year price tag $400m in revenue would equate to more than **47,000** schizophrenics taking this drug on a yearly basis. We just don't see a drug with inferior efficacy seeing that kind of widespread usage as there are so many better alternatives already approved and selling briskly.

[13] Edward Nash, SunTrust Robinson Humphrey pg. 8 "Initiating Coverage with a Buy Rating and a $50 PT" Research issued 5/15/15

Worst case, this drug fails at Phase III. We think that's a non trivial risk given that (a) the higher dose failed; (b) the control arm clocked in at an unusually low #; (c) the inferred half-life for a once-a-day dosing regimen is too short when looking at D2 receptor occupancy.

Even if successful in the Phase III and subsequently approved by the FDA, consider that there are some awful antipsychotics which were also approved by the FDA and linger on with minimal revenues (One such example is Vanda Pharmaceutical's Fanapt, which does less than $50m a year).

With an industry multiple of 3.5x sales our best case of $400m in revenues would put ITCI stock slightly north of $40 -- **years from now if everything breaks right.** More likely this drug either fails during the pivotal study or ends up being used sporadically as a last-ditch attempt for patients who come off better antipsychotics – ie. more in line with Fanapt's usage. In that case peak sales would be far less and we wouldn't be surprised if this drug after approval peaks out at south of $100m annually. It's also important to note that the original patent was filed in 2006 and expires in 2025[14] – not a lot of time to rake in the profits.

This is especially true given the large number of high-quality drugs in the space currently off-patent. What unique factors do shareholders of ITCI believe ITI-007 possesses that will command a pricing premium with large swaths of patients successfully staying on treatment?

[14] See Link to Patent : https://www.google.com/patents/WO2007025103A3?cl=en&dq=ininventor:%22Lawrence+P.+Wennogle%22+schizophrenia&hl=en&sa=X&ei=_J2VVc2cE8mbNvDaglg&ved=0CB0Q6AEwAA

Bottom Line – we think a mid-point of our various potential scenarios – ie. $220m in sales, multiplied by 3.5x, discounted back 30% (after all the drug is not yet approved and still in the midst of confirmatory studies) with $100m added back in for ITCI's expected cash position upon successful breakeven – and we get a fair value of the stock at **$18.26 per share. That's almost a 50% drop from the current price!**

[220 x 3.5 = 770. 770 * .70 = 539. 539 + 100 = 639. 639 / 35m shares = $18.26 **]**

Now, we understand that the current biotech market is trading at lofty, all-time highs. Many drug company trade at nose-bleed, sky high valuation irrespective of revenues and sales potential. Yet investors are well-advised to do their homework and double check the facts underlying assumptions to valuation and not just buy into a name because the stock shows momentum.

We think that an unemotional review of Intra-Cellular's lead candidate ITI-007 shows the drug to be unremarkable and full of questionable issues. The real question we remain with is why investors would want to look past all those red flags and afford this stock a price per share that assumes everything works out perfectly in the end for ITCI.

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Appendix A

	Treatment	Baseline PANSS	4 Week Change in PANSS	% Reduction in PANNS Score at 4 Weeks
Meltzer et al 2011	Latuda 40 mg/day	96.6	-22	33%
	Latuda 120 mg/day	97.9	-22	32%
	Zyprexa 15 mg/day	96.3	-24	36%
	Placebo	95.8	-12.5	19%
Vanover et al 2014	ITI-007 60 mg/day	88.1	-13.2	23%
	ITI-007 120 mg/day	84.6	-8.3	15%
	Risperdal 4 mg/day	86.1	-13.4	24%
	Placebo	86.3	-7.4	13%
Kane et al 2010	Saphris 5 mg 2x/day	89.2	-18	30%
	Saphris 10 mg 2x/day	89.1	-14	23%
	Placebo	88.9	-12	20%
	Haldol 4 mg 2x/day	88.6	-17.5	30%
Kinon et al 2011	Placebo	97.6	-14.6	22%
	LY 5 mg 2x/day	97.4	-12.9	19%
	LY 20 mg 2x/day	99.3	-13.5	19%
	LY 40 mg 2x/day	99.7	-13.9	20%
	LY 80 mg/ 2x/day	98.6	-14	20%
	Zyprexa 15 mg/day	99.6	-20.7	30%
Durgam et al 2014	Placebo	97.3	-10.5	16%
	Cariprazine 1.5 mg/day	97.1	-15	22%
	Cariprazine 3 mg/day	97.2	-19	28%
	Cariprazine 4.5 mg/day	96.7	-21.5	32%
	Risperdal 4 mg/day	98.1	-23.5	35%
Correll et al 2015	Brexpiprazole 0.25 mg/day	93.4	-7.5	12%
	Brexpiprazole 2 mg/day	95.9	-14	21%
	Brexpiprazole 4 mg/day	94.9	-17	26%
	Placebo	95.9	-7.5	12%
Kane et al 2015	Brexpiprazole 1 mg/day	93.3	-14	22%
	Brexpiprazole 2 mg/day	96.3	-13	20%
	Brexpiprazole 4 mg/day	95.1	-15.5	24%
	Placebo	94.8	-12	19%
Bugarski et al 2014*	Placebo	65.1	-11.9	18%
*PANSS scored 0-6 instead of 1-7	Bitopterin 10 mg/day	64.8	-11.7	18%
	Bitopterin 30 mg/day	65.9	-15.3	23%
	Olanzapine 15 mg/day	63	-14.9	24%

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