CANACCORD Genuity

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Radius Health

Biotechnology

US Equity Research
6 March 2015

BUY
unchanged

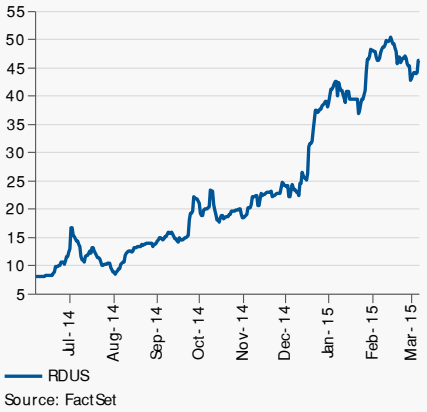
PRICE TARGET	US$70.00
unchanged	
Price (5-Mar)	US$46.18
Ticker	RDUS-NASDAQ

52-Week Range (US$):	7.46 - 51.22
Avg Daily Vol (M) :	242.3
Shares Out. (M) :	29.7
Market Cap (US$M):	1,374

FYE Dec	2013A	2014E	2015E	2016E
Revenue (US$M)	0.0	0.0	0.0	82.1
EPS Adj&Dil (US$)	(3.97)	(54.05)	(3.06)	(1.52)

Quarterly Revenue	Q1	Q2	Q3	Q4
2013A	-	-	-	-
2014E	0.0A	0.0A	0.0A	0.0
2015E	0.0	0.0	0.0	0.0
2016E	-	-	-	-

Quarterly EPS Adj&Dil	Q1	Q2	Q3	Q4
2013A	-	-	-	-
2014E	(50.45)A	(2.22)A	(0.59)A	(0.79)
2015E	(0.68)	(0.88)	(0.75)	(0.75)
2016E	-	-	-	-



Source: FactSet

Radius is a biotechnology company focused on drugs for endocrine disorders, including osteoporosis.

John Newman, PhD | Canaccord Genuity Inc. (US) | JNewman@canaccordgenuity.com | 212.389.8042
Kevin Dai, PharmD, BCOP | Canaccord Genuity Inc. (US) | kdai@canaccordgenuity.com | 212.389.8043

Company Update

Final Phase 3 abaloparatide data clean, details on wrist fracture impressive

Squeaky clean safety for abaloparatide encouraging. Dr. Paul Miller presented final safety data for abaloparatide at the 2015 ENDO meeting in San Diego that were very clean and more favorable vs. Forteo, which we find encouraging. Importantly, based on comments from management, there is no evidence of neutralizing antibodies to abaloparatide of higher antibody levels vs. Forteo. In summary, there were no new notable safety issues raised in the final Phase 3 presentation.

Wrist fracture data better for abaloparatide, no hip fractures. Abaloparatide showed a 72% reduction in wrist fracture vs. Forteo (0.5% abaloparatide, 1.8% Forteo), which we believe is meaningful. Interestingly, hip fracture data were not available since no hip fractures occurred in any arm of the study.

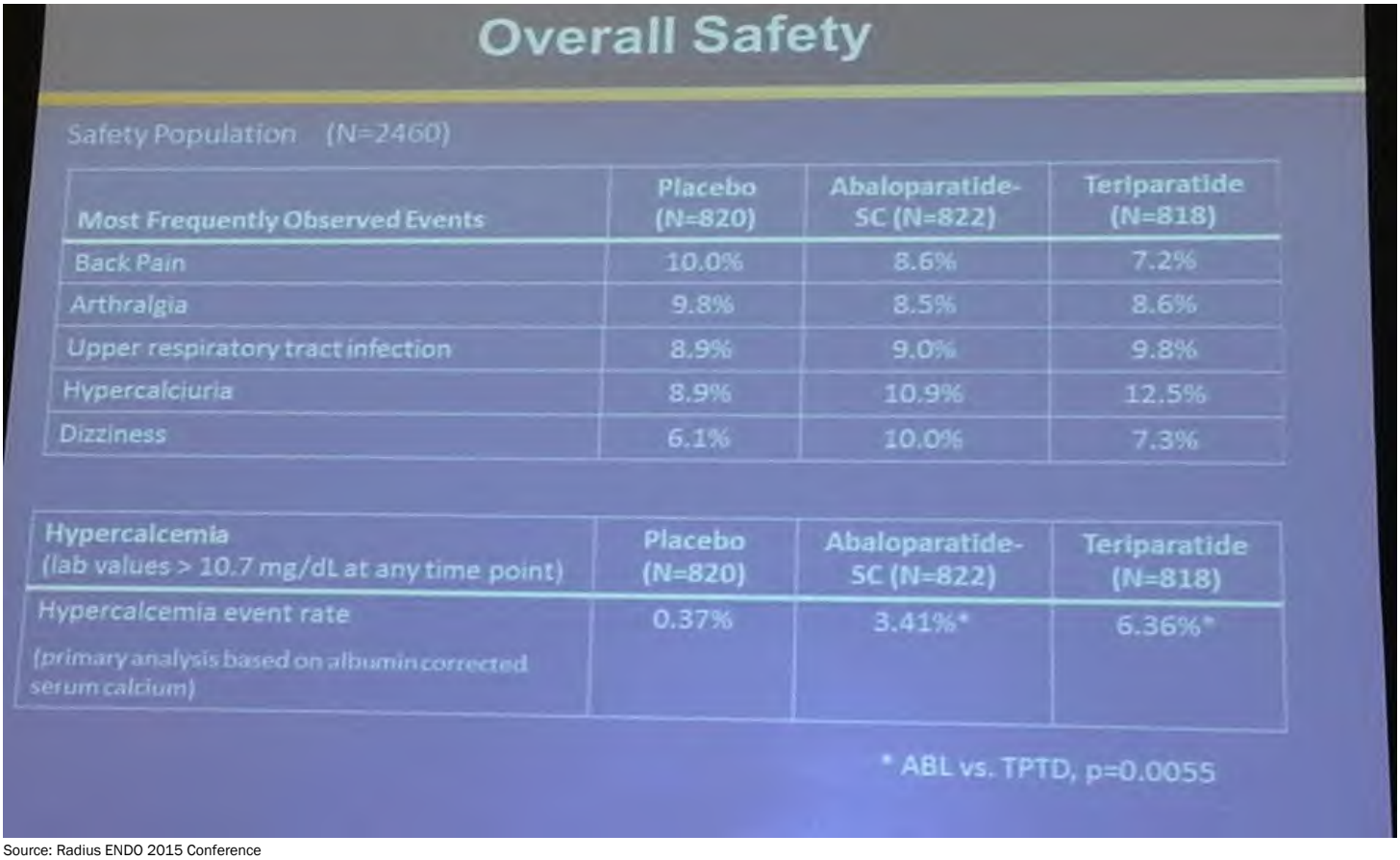
Longer time to first fracture for abaloparatide noted by KOLs. Several Key Opinion Leaders (KOLs) seemed impressed that the time to first fracture was longer than placebo and Forteo with near immediate separation of Kaplan Meier curves. Although mechanistic details are not yet known, the data speak for themselves, in our view.

Expect extension data 2Q15, FDA approval 2H16. We continue to expect positive 6-month extension data for abaloparatide in 2Q15, which should reinforce the safety profile for the drug. We model ~$822M US peak sales for abaloparatide by 2022 based on better efficacy and safety vs. Forteo, with FDA approval expected 2H16. We believe that abaloparatide acts more quickly to prevent fractures than Forteo with a more favorable safety profile, which should result in favorable commercial uptake.

Squeaky clean safety major plus for Abaloparatide

The safety profile of Abaloparatide was very clean, which we believe is a significant plus in terms of commercial positioning versus Forteo. Very importantly, based on comments from management, no evidence of neutralizing antibodies to abaloparatide was seen, and the incidence of antibodies was similar to Forteo. Importantly, the Forteo arm had higher incidences of several adverse events vs. Abaloparatide. Forteo showed higher incidence of hypercalcemia (6.36% vs. 3.41%) and hypercalcuria (12.5% vs. 10.5%). Importantly, the higher rate of hypercalcemia for Forteo vs. abaloparatide was statistically significant (6.36% vs. 3.41%, p=0.0055). We remind investors that the very large size of the safety database should be very meaningful to FDA. In fact, the Forteo arm in the abaloparatide study had more patients than the approved dose arm from the original Phase 3 Forteo study in severe osteoporosis.

Figure 1: Overall Safety



Source: Radius ENDO 2015 Conference

Abaloparatide demonstrates positive results on vertebral and non-vertebral fracture in postmenopausal women with osteoporosis

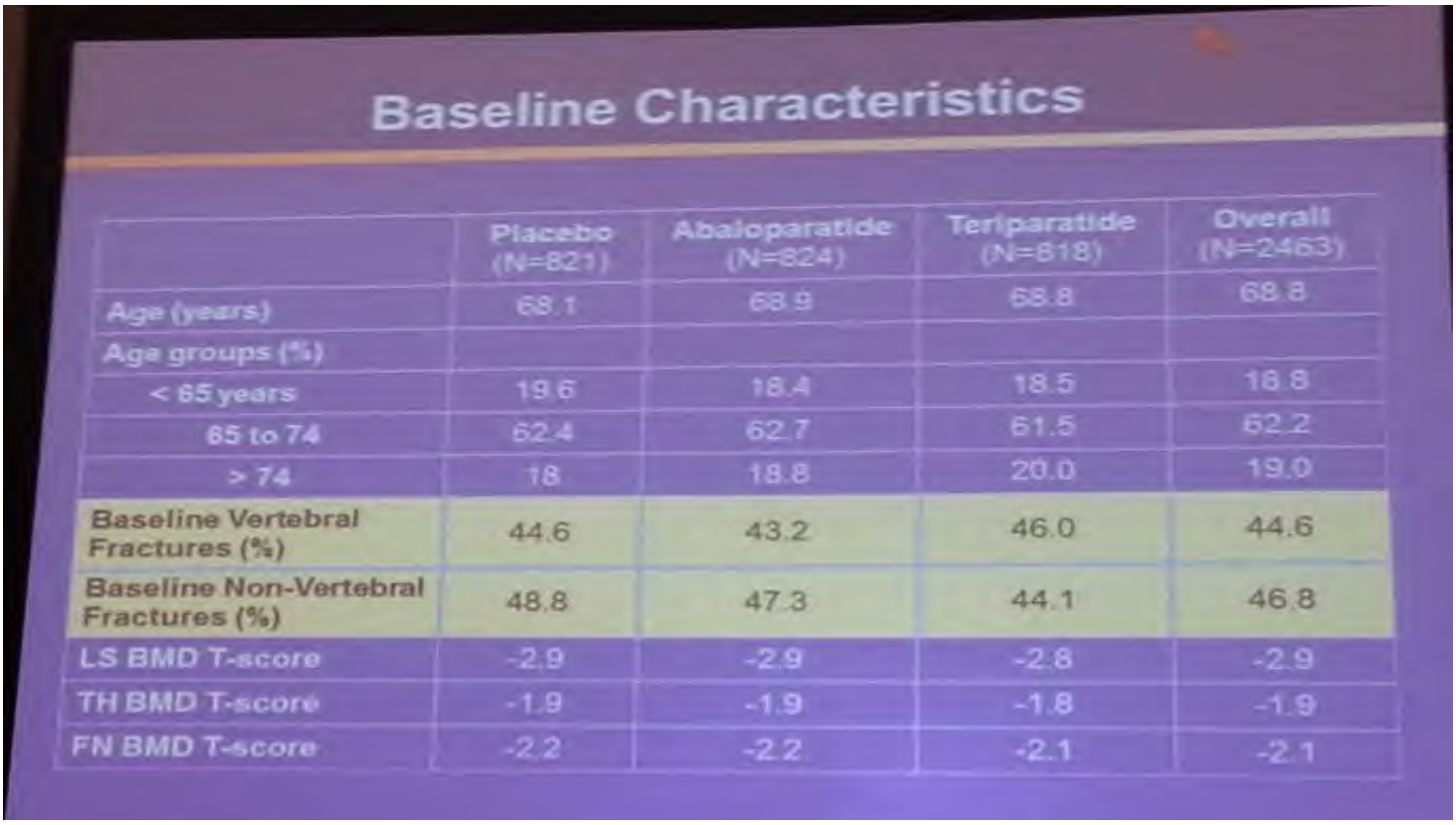
The ACTIVE (Abaloparatide Comparator Trial In Vertebral Endpoints) trial is a multicenter, multinational, double-blind, placebo controlled fracture prevention trial that assessed the efficacy and safety of 18 months of Abaloparatide vs. placebo and Forteo in postmenopausal women with osteoporosis. All subjects were postmenopausal (for at least 5 years) and between the ages of 50 – 85 years old. Importantly, these patients all had osteoporosis, as defined as T-score of ≤ -2.5 at the spine or hip **plus** either prior vertebral or non-vertebral fracture. Therefore, these patients were considered to be **severe osteoporosis patients**, which we believe is a tough to treat demographic to begin with.

A total of 2,463 patients were enrolled and randomized to receive 18-months of SQ Abaloparatide, Forteo, or placebo.

- The primary objective is the reduction in the incidence of new vertebral fractures vs. placebo.
- Secondary objectives are:
  1. Increases in BMD at the lumbar spine, total hip, and femoral neck;
  2. Reduction in the incidence of non-vertebral fractures vs. placebo;
  3. Time to first event non-vertebral fracture (Kaplan Meier Curve);
  4. Changes in CTX and PINP biomarkers;
  5. Overall safety and tolerability of 18 month Abaloparatide therapy.

Baseline characteristics are similar between all three groups, as presented in the figure below. Baseline vertebral and non-vertebral fractures were not statistically different between the groups.

Figure 2: Baseline Characteristics from ACTIVE trial



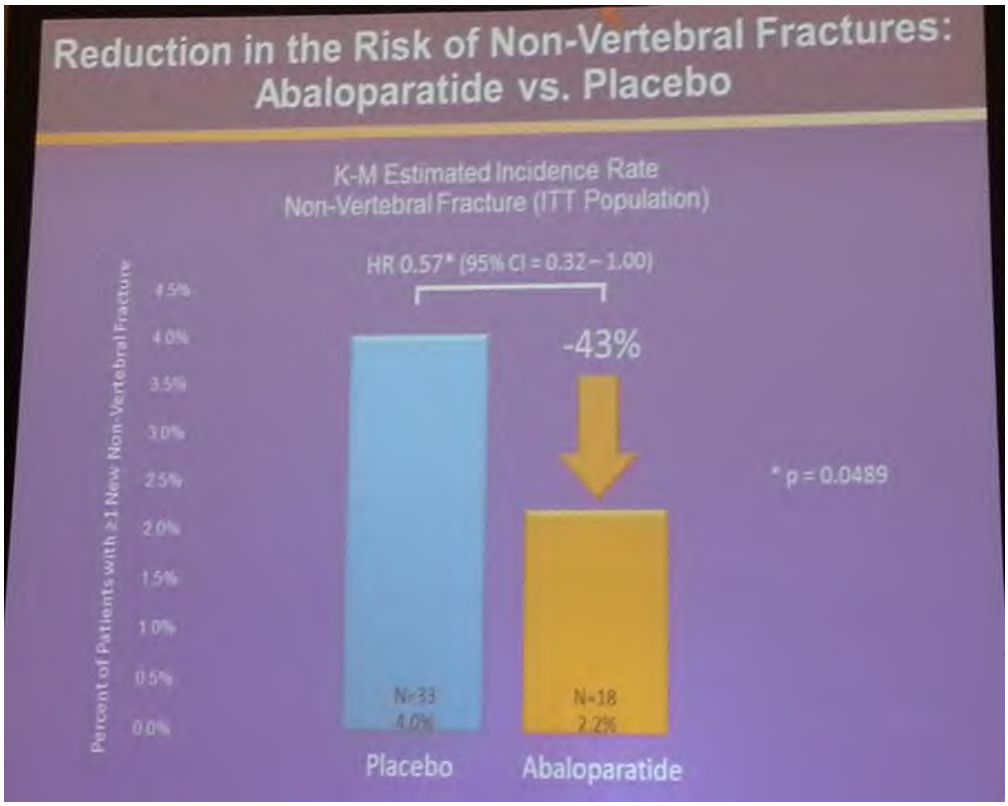
Baseline Characteristics

	Placebo (N=821)	Abaloparatide (N=824)	Teriparatide (N=818)	Overall (N=2463)
Age (years)	68.1	68.9	68.8	68.8
Age groups (%)				
< 65 years	19.6	18.4	18.5	18.8
65 to 74	62.4	62.7	61.5	62.2
> 74	18	18.8	20.0	19.0
Baseline Vertebral Fractures (%)	44.6	43.2	46.0	44.6
Baseline Non-Vertebral Fractures (%)	48.8	47.3	44.1	46.8
LS BMD T-score	-2.9	-2.9	-2.8	-2.9
TH BMD T-score	-1.9	-1.9	-1.8	-1.9
FN BMD T-score	-2.2	-2.2	-2.1	-2.1

Source: Radius ENDO 2015 Conference

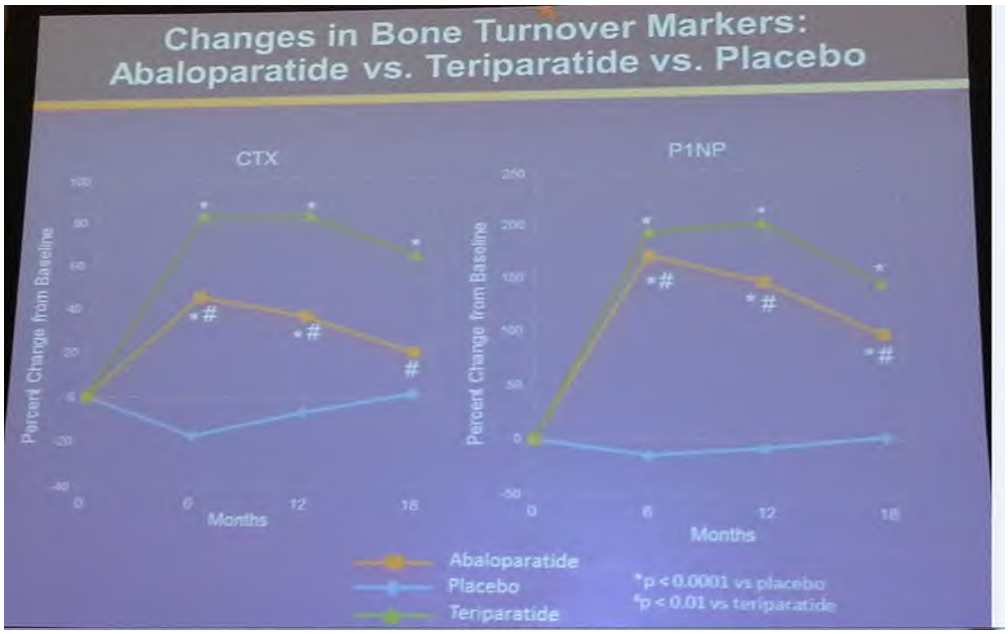
Compared to placebo, Abaloparatide demonstrated a 43% reduction in the risk of non-vertebral fractures (p = 0.0489), with new non-vertebral fractures of 4% in the placebo arm and 2.2% in the Abaloparatide arm (Figure 2). Additionally, Abaloparatide showed significant increases in bone anabolic activity, including P1NP. We find this data significant since this translates into positive bone formation and favorable clinical effects in patients. Forteo had higher anabolic markers and bone resorption markers, as demonstrated by higher CTX levels, suggesting an attenuation in the anabolic benefit of continued Forteo administration. Abaloparatide also has an elevated CTX level above baseline, although the Abaloparatide group maintained lower levels of CTX resorption markers, which we believe can translate into longer anabolic effects for the drug vs. Forteo (Figures 3 and 4).

Figure 3: Abaloparatide demonstrates reduction in risk of non-vertebral fractures



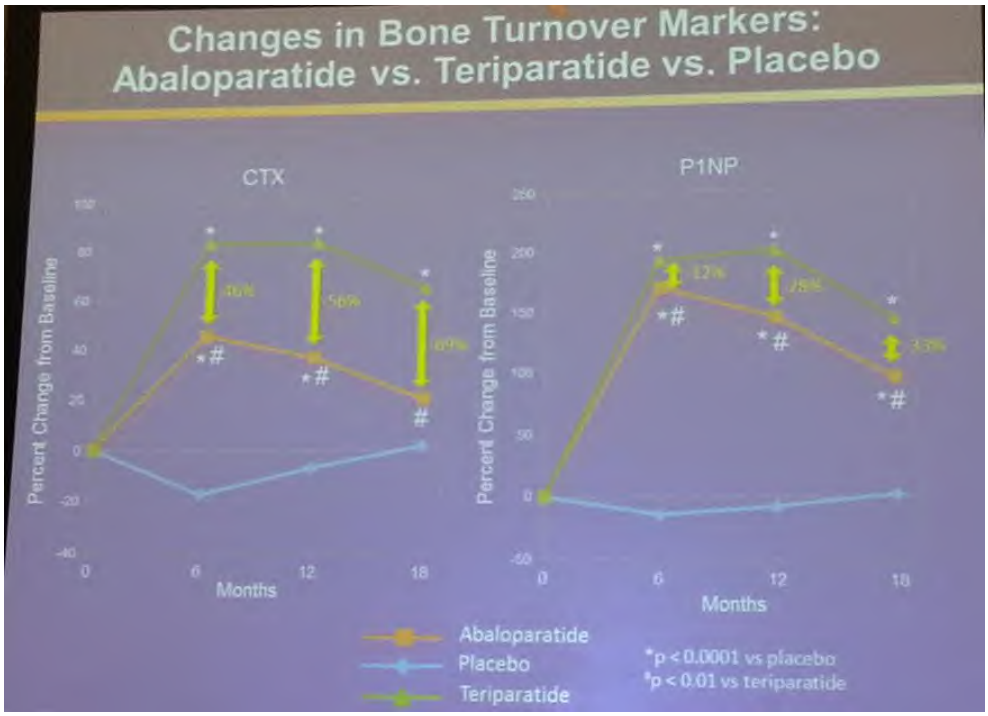
Source: Radius ENDO 2015 Conference

Figure 4: Changes in bone turnover markers



Source: Radius ENDO 2015 Conference

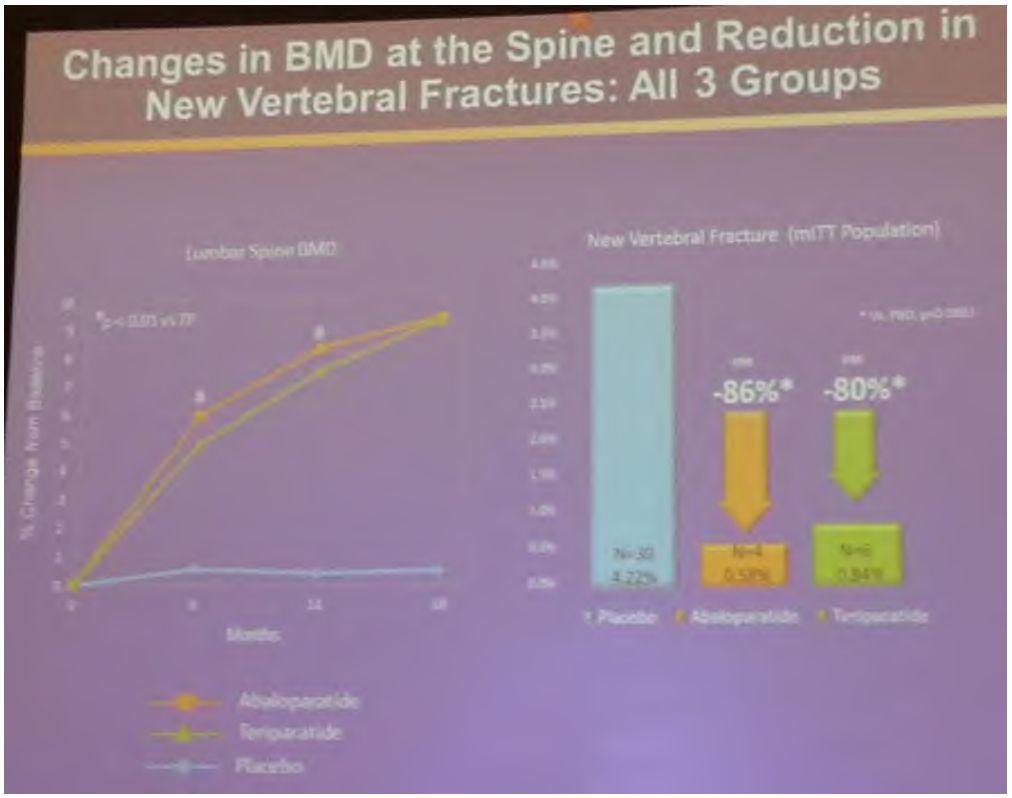
Figure 5: Changes in bone turnover markers



Source: Radius ENDO 2015 Conference

In terms of BMD changes, both Abaloparatide and Forteo demonstrated improved changes in lumbar spine BMD vs. placebo (P < 0.01). However, at 6 and 12 months, Abaloparatide also demonstrated improved lumbar spine BMD vs. Forteo, as seen in the figure below. Additionally, new vertebral fractures were significantly lower in the Abaloparatide group (0.58%) vs. placebo (4.22%) (P<0.0001), representing an 86% decrease in incidence of new fractures. Interestingly, Abaloparatide also had a numerically better decrease in new vertebral fractures vs. Teriparatide, which reported a 0.84% new vertebral fracture incidence and only 80% decrease in incidence, although this is not statistically significant.

Figure 6: BMD changes at spine and reduction in new vertebral fractures

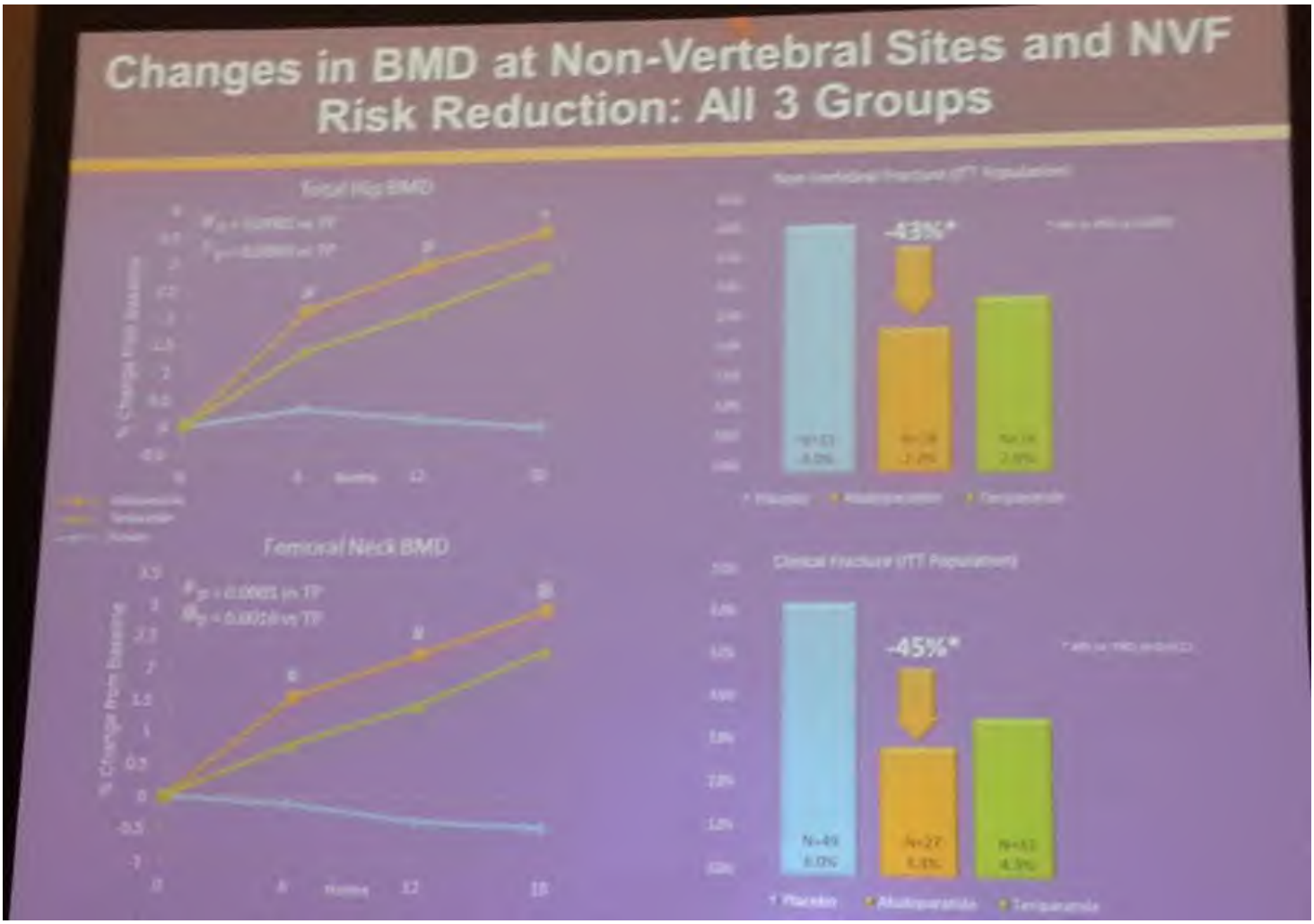


Source: Radius ENDO 2015 Conference

Abaloparatide had a higher improvement in BMD at both total hip and femoral neck vs. Forteo and placebo, which was statistically significant. In terms of non-vertebral fractures, Abaloparatide had an incidence of only 2.2% vs. Forteo of 2.9% (NS) and placebo of 4.0% (P<0.001). Similar results were also seen in the clinical fracture data, in which Abaloparatide had an incidence of only 3.3% vs. Forteo of 4.3% (NS) and placebo of 6.0% (p<0.01). Again, we believe this justifies the improved benefit of Abaloparatide vs. Forteo numerically, despite the fact that it was not statistically significant since the trial was not powered to compare the two arms directly.

It is interesting to note that there is no hip fracture read, since no cases of hip fractures were observed in all three treatment arms.

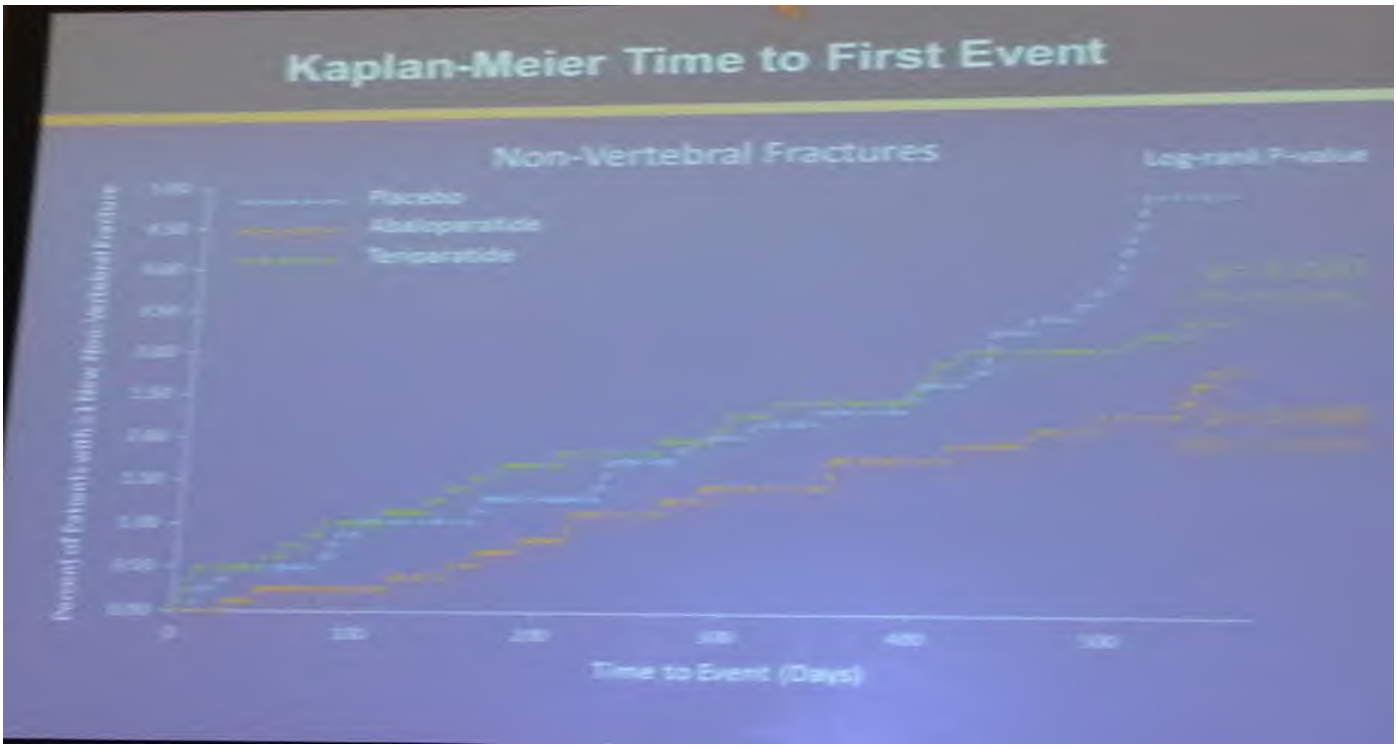
Figure 7: Changes in BMD at non-vertebral sites and non-vertebral fracture risk reduction



Source: Radius ENDO 2015 Conference

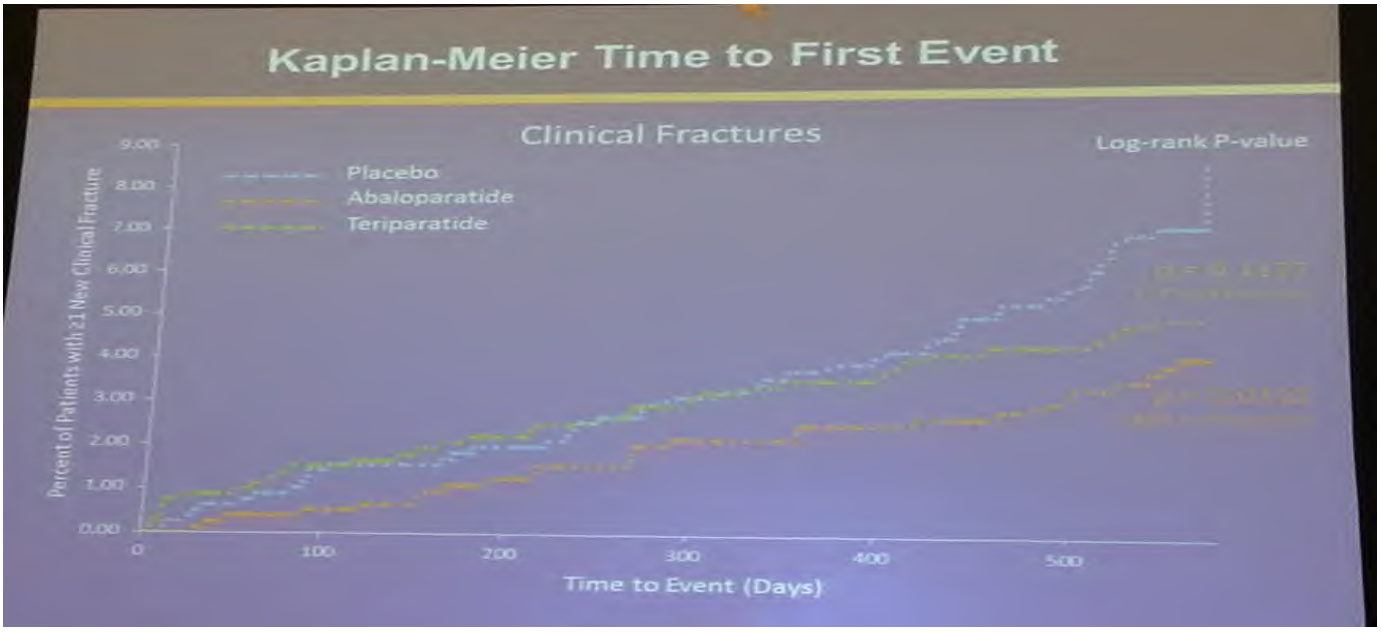
Abaloparatide prolonged time to first non-vertebral fracture and clinical fracture vs. placebo in a statistically significant fashion, and curves show an almost immediate separation from placebo and Forteo. Importantly, the Forteo arm does not separate from placebo until ~420 days on treatment. Longer time to first non-vertebral fracture should add support to the strong fracture reduction seen for abaloparatide vs. placebo, increasing the chances for FDA approval, in our view. Many KOLS were intrigued with this faster time to reduction in fracture risks, which we believe is a positive for the drug.

Figure 8: Kaplan-Meier time to first event for non-vertebral fractures



Source: Radius ENDO 2015 Conference

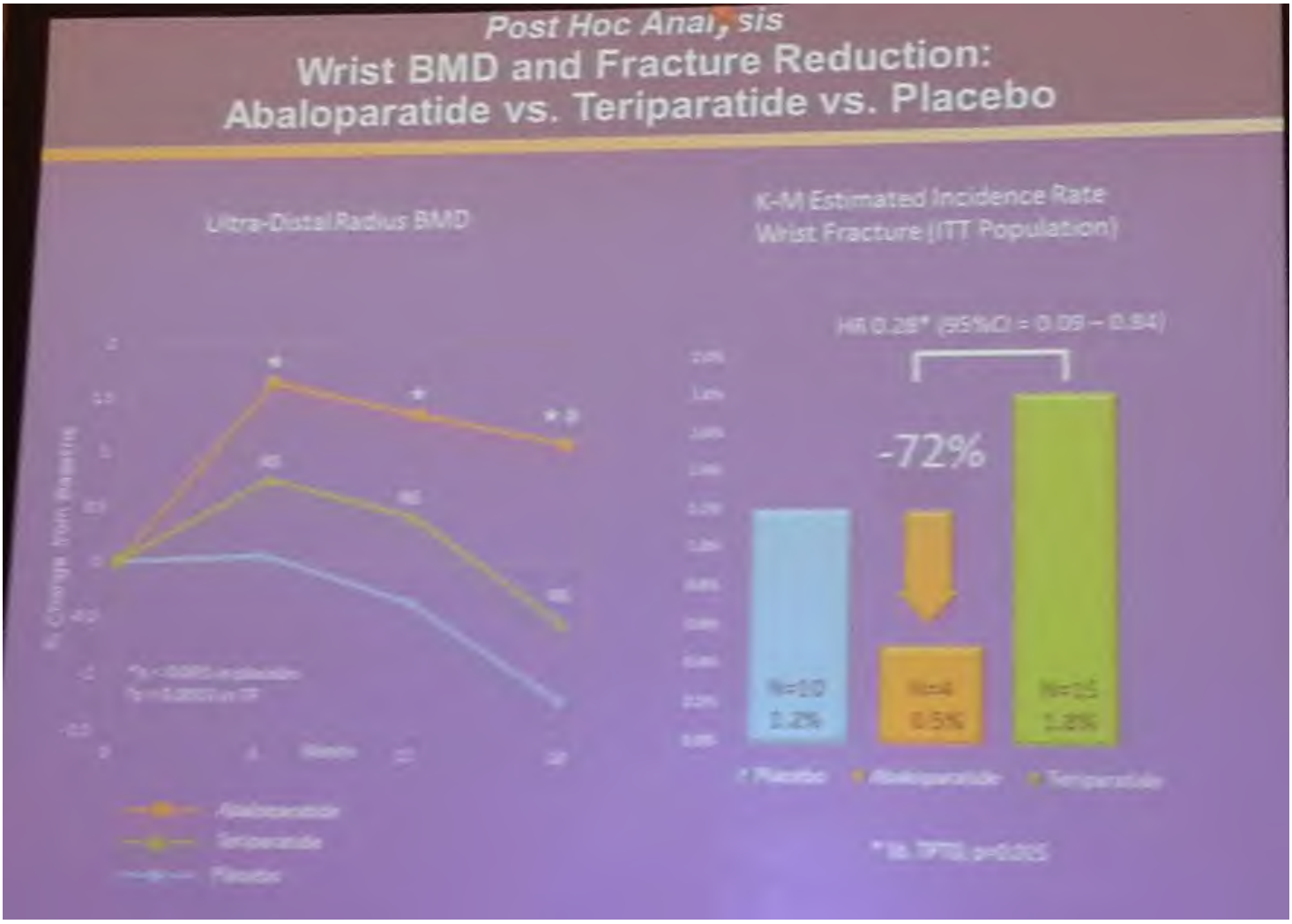
Figure 9: Kaplan-Meier time to first event for clinical fractures



Source: Company Reports, Canaccord Genuity estimates

Interestingly, Abaloparatide showed a statistically significant lowering in wrist fracture rate vs. Forteo (0.5% vs. 1.8%, p = 0.005), which we also view as significant since patients usually fall on their wrists first, making this site highly susceptible to fractures. In terms of ultra-distal radius BMD, Forteo did not demonstrate a statistical benefit vs. placebo, which Abaloparatide did at all time periods, a positive. Additionally, Abaloparatide showed statistical benefit in BMD at 18 months vs. Forteo (P = 0.001), further suggesting a favorable commercial advantage over Forteo.

Figure 10: Wrist BMD and fracture reduction in all three arms



Source: Radius ENDO 2015 Conference

In conclusion, Abaloparatide demonstrated a significant reduction of 86% in the incidence of new vertebral fractures and a significant reduction of 43% in the Kaplan-Meier incidence of non-vertebral fractures vs. placebo. When compared to Forteo, Abaloparatide had significant increases in BMD at the total hip and femoral neck at all time points and significantly increased BMD at the spine at 6 and 12 months. The Kaplan-Meier curves showed a significantly faster reduction in the risk of non-vertebral and clinical fractures in the Abaloparatide group. We believe this is a strong takeaway coming out of the meeting, as this faster reduction may resonate well with prescribers as they decide between regimens. We believe that prevention of fracture rates faster is clinically meaningful to physicians since doctors do not want to delay the effectiveness of the parathyroid benefit for the patients. Finally, the overall safety is very clean, with Abaloparatide showing significantly less hypercalcemia vs. Forteo. Taken together, we believe the data reinforces a significant commercial advantage over Forteo, a strong positive for Radius.

Figure 11: RDUS income statement

Revenues	2013A	1Q14A	2Q14A	3Q14A	4Q14E	2014E	2015E	2016E	2017E	2018E	2019E	2020E
abaloparatide - US								82,120	239,867	357,419	465,944	583,042
abaloparatide - Ex-US								-	90,548	204,751	251,503	298,717
Total								**82,120**	**330,415**	**562,170**	**717,447**	**881,759**
Income Statement	**2013A**	**1Q14A**	**2Q14A**	**3Q14A**	**4Q14E**	**2014E**	**2015E**	**2016E**	**2017E**	**2018E**	**2019E**	**2020E**
Total Revenue	-	-	-	-	-	-	-	82,120	264,315	457,747	594,210	738,375
COGS	-	-	-	-	-	-	-	16,424	52,863	91,549	118,842	147,675
Gross Profit	-	-	-	-	-	-	-	65,696	211,452	366,198	475,368	590,700
Operating Expenses												
Research and development	60,536	9,717	10,618	13,817	14,926	49,078	74,464	59,354	55,796	65,122	84,196	117,620
abaloparatide-SC	45,977	8,107	9,728	10,132	12,158	40,126	27,052	18,937	13,256	13,256	13,256	13,256
abaloparatide-TD	11,459	185	278	523	785	1,770	31,380	21,966	15,376	10,763	7,534	5,274
RAD1901	-	-		1,027	1,000	2,027	12,100	14,520	23,232	37,171	59,474	95,158
RAD140	-	-				-	-					
other	3,100	1,425	1,710	819	983	4,937	3,932	3,932	3,932	3,932	3,932	3,932
General and administrative	6,829	2,139	3,070	2,836	2,700	10,745	13,200	57,484	85,902	102,993	133,697	166,134
Total Operating Expense	67,365	11,856	13,688	16,653	17,626	59,823	87,664	116,838	141,698	168,115	217,893	283,754
EBITDA												
Operating income	(67,365)	(11,856)	(13,688)	(16,653)	(17,626)	(59,823)	(87,664)	(51,142)	69,754	198,083	257,475	306,946
Other income (expense), net	9,085	(2,233)	1,727	(802)	(802)	(2,110)	(5,824)	(2,110)	(5,824)	(2,110)	(5,824)	(2,110)
Loss on retirement of note payable			(203)									
Interest (expense) income, net	(2,410)	(399)	(445)	24	24	(796)	(1,544)	(796)	(1,544)	(796)	(1,544)	(796)
Accretion of preferred stock		(4,969)	(4,031)									
Pre-tax income (GAAP)	(60,690)	(19,457)	(16,640)	(17,431)	(18,404)	(71,932)	(95,032)	(54,048)	62,386	195,177	250,107	304,040
Pre-tax income (non-GAAP)												
Taxes (GAAP)	-	-	-	-	-	-	-	-	23,083	72,215	92,540	112,495
Tax rate (GAAP)	37%	37%	37%	37%	37%	37%	37%	37%	37%	37%	37%	37%
Net Income (GAAP)	(60,690)	(19,457)	(16,640)	(17,431)	(18,404)	(71,932)	(95,032)	(54,048)	39,303	122,961	157,568	191,545
GAAP EPS (diluted)	**($3.97)**	**($50.45)**	**($2.22)**	**($0.59)**	**($0.79)**	**($54.05)**	**($3.06)**	**($1.52)**	**$1.05**	**$3.14**	**$3.83**	**$4.43**
Diluted shares outstanding	15,278	386	7,500	29,746	23,200	15,208	31,539	35,562	37,340	39,207	41,167	43,226

Source: Company Reports, Canaccord Genuity estimates

Figure 12: RDUS Valuation

Product	Peak Sales ($MM)	Year	NPV at launch	Estimated launch	Time to launch	Probability Adjustment	Current Value ($MM)	Scenario probability	Value / Share (NPV)	Value / Share (EV/Sales)
abaloparatide										
US	$822	2022	$1,364	6/1/2016	1.2	85%	$967	100%	$33	$47
Ex-US - co-promote	$346	2021	$429	1/1/2017	1.8	85%	$272	50%	$5	$11
Ex-US - royalty	$346	2021	$201	1/1/2017	1.8	85%	$139	50%	$2	$11
Total abaloparatide							**$1,239**		**$40**	**$69**
RAD-1901										
US	$467	2023	$670			35%	$234		$8	$10
Ex-US	$427	2023	$188			35%	$66		$0	$9
Total RAD-1901							**$300**		**$8**	**$19**
Total Product Value							$1,239		$49	$87
Cash							70		$2	$2
Total Equity Value							**1,309**		**$51**	**$90**
Shares Outstanding (MM)							29			
									Average	$70

Risk-Free Rate	3.0%
Beta	1.8
Risk Premium	5%
Discount Rate	12%
EV/Sales	4.25

Source: Company Reports, Canaccord Genuity estimates

Appendix: Important Disclosures

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Target Price / Valuation Methodology:

Radius Health - RDUS

Our $70 price target is based on the average of our probability adjusted NPV and EV/S methodologies.

Risks to achieving Target Price / Valuation:

Radius Health - RDUS

Risks to our outlook and price target include the following: the Phase 3 study for abaloparatide in osteoporosis may be negative, or fail to meet investor expectations, resulting in downside to shares and our price target. Also, Phase 3 data may be positive in terms of efficacy, but show an unexpected safety signal, also resulting in downside to our price target. Antibody formation was been seen in Phase 2 studies, with one patient showing potential evidence of neutralizing antibodies. Even assuming positive Phase 3 data for subcutaneous abaloparatide in osteoporosis, FDA approval may be delayed or may not occur at all, also resulting in downside to shares and our price target. FDA may also grant approval, but require large, lengthy and expensive post-approval studies, which could also result in downside to shares and our price target. Clinical data from other osteoporosis products including anti-sclerostin antibodies from Amgen, Merck, Eli Lilly and Novartis could be viewed as superior to abaloparatide, pressuring shares. Competition from existing and new osteoporosis products could also result in lower revenues that expected, leading to downside to our estimates and the share price. Although unlikely, a paragraph 4 challenge could be filed against Lilly's Forteo, a molecule closely related to abaloparatide, which investors may interpret as increasing risk for abaloparatide, and pressuring Radius shares. Forteo was approved as an NDA, where the ANDA pathway is well established. Even though Forteo is essentially a biologic, since it is a peptide, it is feasible although unlikely that a generic challenger could emerge. FDA has approved a generic version of Lovenox, a biologic approved via the NDA pathway, although the process took many years. If a generic version of Forteo were to reach the market, usage of abaloparatide could decline, resulting in downside to our estimates and price target. Also, if FDA were to approve a generic version of Copaxone, a peptide used to treat multiple sclerosis, investors may see increased risk of a generic challenge and approval for abaloparatide, as both products are classified as NDA filings for biologic peptides. A transdermal microneedle formulation for abaloparatide may not be feasible, which investors may view as negative for life cycle management and commercial competitive positioning for Radius, pressuring shares. Even if a microneedle formulation can be developed to show equal efficacy to the subcutaneous formulation, FDA may require a full clinical study versus a bridging study, which would require additional funding and time to approval.

Distribution of Ratings:

Global Stock Ratings (as of 03/06/15)

Rating	Coverage Universe		IB Clients
	#	%	%
Buy	575	58.14%	33.57%
Hold	322	32.56%	16.15%
Sell	42	4.25%	2.38%
Speculative Buy	50	5.06%	56.00%
	989*	100.0%	

*Total includes stocks that are Under Review

Canaccord Genuity Ratings System

BUY: The stock is expected to generate risk-adjusted returns of over 10% during the next 12 months.

HOLD: The stock is expected to generate risk-adjusted returns of 0-10% during the next 12 months.

SELL: The stock is expected to generate negative risk-adjusted returns during the next 12 months.

NOT RATED: Canaccord Genuity does not provide research coverage of the relevant issuer.

"Risk-adjusted return" refers to the expected return in relation to the amount of risk associated with the designated investment or the relevant issuer.

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SPECULATIVE: Stocks bear significantly higher risk that typically cannot be valued by normal fundamental criteria. Investments in the stock may result in material loss.

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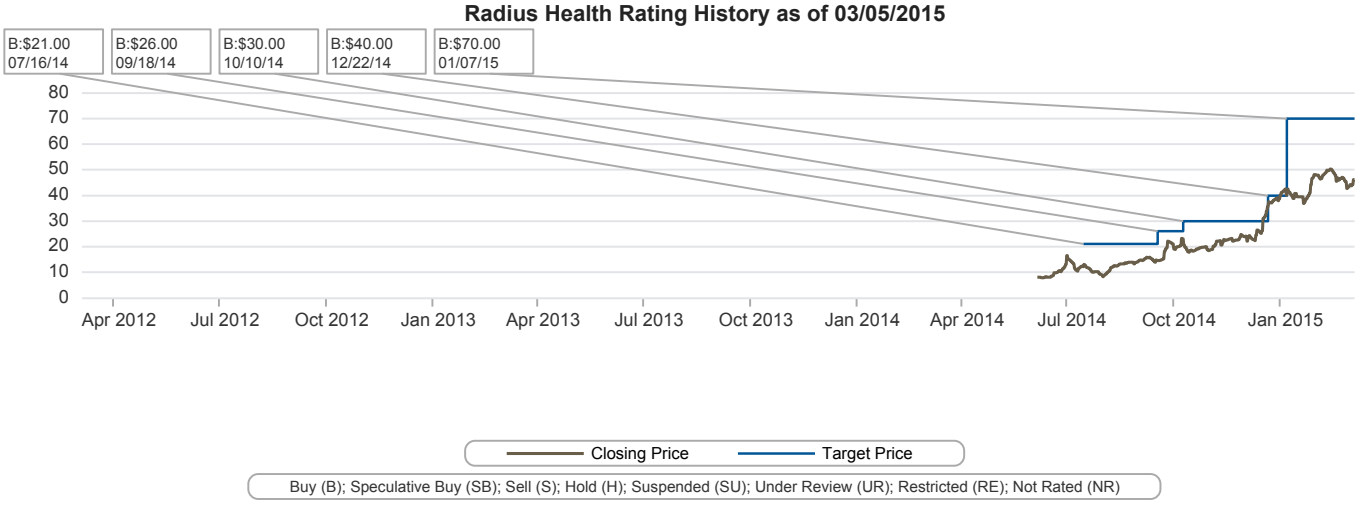
An analyst has visited the material operations of Radius Health. No payment was received for the related travel costs.

Radius Health Rating History as of 03/05/2015



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