Investor science conference call
European Respiratory Society

07 September 2016
Forward-looking statements

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This document contains certain forward-looking statements with respect to the operations, performance and financial condition of the Group, including, among other things, statements about expected revenues, margins, earnings per share or other financial or other measures. Although we believe our expectations are based on reasonable assumptions, any forward-looking statements, by their very nature, involve risks and uncertainties and may be influenced by factors that could cause actual outcomes and results to be materially different from those predicted. The forward-looking statements reflect knowledge and information available at the date of preparation of this document and AstraZeneca undertakes no obligation to update these forward-looking statements. We identify the forward-looking statements by using the words ‘anticipates’, 'believes', 'expects', 'intends' and similar expressions in such statements. Important factors that could cause actual results to differ materially from those contained in forward-looking statements, certain of which are beyond our control, include, among other things: the loss or expiration of, or limitations to, patents, marketing exclusivity or trademarks, or the risk of failure to obtain and enforce patent protection; the risk of substantial adverse litigation/government investigation claims and insufficient insurance coverage; effects of patent litigation in respect of IP rights; exchange rate fluctuations; the risk that R&D will not yield new products that achieve commercial success; the risk that strategic alliances and acquisitions, including licensing and collaborations, will be unsuccessful; the impact of competition, price controls and price reductions; taxation risks; the risk of substantial product liability claims; the impact of any delays in the manufacturing, distribution and sale of any of our products; the impact of any failure by third parties to supply materials or services; the risk of failure of outsourcing; the risks associated with manufacturing biologics; the risk of delay to new product launches; the difficulties of obtaining and maintaining regulatory approvals for products; the risk of failure to adhere to applicable laws, rules and regulations; the risk of failure to adhere to applicable laws, rules and regulations relating to anti-competitive behaviour; the risk that new products do not perform as we expect; failure to achieve strategic priorities or to meet targets or expectations; the risk of an adverse impact of a sustained economic downturn; political and socio-economic conditions; the risk of environmental liabilities; the risk of occupational health and safety liabilities; the risk associated with pensions liabilities; the risk of misuse of social medial platforms and new technology; the risks associated with developing our business in emerging markets; the risk of illegal trade in our products; the risks from pressures resulting from generic competition; the risk of failure to successfully implement planned cost reduction measures through productivity initiatives and restructuring programmes; economic, regulatory and political pressures to limit or reduce the cost of our products; the risk that regulatory approval processes for biosimilars could have an adverse effect on future commercial prospects; the impact of failing to attract and retain key personnel and to successfully engage with our employees; the impact of increasing implementation and enforcement of more stringent anti-bribery and anti-corruption legislation; and the risk of failure of information technology and cybercrime. Nothing in this presentation / webcast should be construed as a profit forecast.
<table>
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<tr>
<th>Agenda</th>
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<tbody>
<tr>
<td>Unmet medical need</td>
<td>Dr Colin Reisner</td>
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<td>Results from the Phase III SIROCCO and CALIMA trials</td>
<td>Dr Mark FitzGerald</td>
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<td>Medical practice</td>
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<td>Looking forward</td>
<td>Tom Keith-Roach</td>
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</tbody>
</table>
## Key late-stage medicines & lifecycle
### Phase III trials or under regulatory review*

<table>
<thead>
<tr>
<th>Respiratory &amp; Autoimmunity</th>
<th>Cardiovascular &amp; Metabolic Diseases</th>
<th>Oncology</th>
<th>Infection, Neuroscience (opportunistic)</th>
</tr>
</thead>
<tbody>
<tr>
<td>brodalumab* (psoriasis)</td>
<td>ZS-9* (hyperkalaemia)</td>
<td>cediranib* (ovarian cancer)</td>
<td>AZD3293 (Alzheimer’s disease)</td>
</tr>
<tr>
<td>benralizumab (severe asthma, COPD)</td>
<td>roxadustat (anaemia)</td>
<td>selumetinib (lung cancer)</td>
<td></td>
</tr>
<tr>
<td>tralokinumab (severe asthma)</td>
<td>Brilinta (heart disease)</td>
<td>durvalumab (multiple cancers)</td>
<td></td>
</tr>
<tr>
<td>PT010 (COPD, asthma)</td>
<td></td>
<td>durva + treme (multiple cancers)</td>
<td></td>
</tr>
<tr>
<td>anifrolumab (lupus)</td>
<td></td>
<td>acalabrutinib (blood cancers)</td>
<td></td>
</tr>
</tbody>
</table>

Status as of 28 July 2016 (H1 2016 Results)  
New medicine with larger potential
Unmet medical need

Dr Colin Reisner
Chief Medical Officer, Pearl Therapeutics and Head of Clinical, Respiratory Global Medicines, AstraZeneca
Asthma that is inadequately controlled by high-dose ICS-based therapy represents a significant healthcare burden

Asthma varies in disease severity¹,²,³

- 315 million people suffer from asthma worldwide
- 1 in 10 people (approx.) with asthma have severe asthma, requiring:
  - High-dose ICS-based therapy
  - Other asthma medications

Linked to poor outcomes and medical emergencies⁴,⁵

- In patients with uncontrolled asthma:
  - 91% have normal daily activities impacted at least once per week

- In patients with uncontrolled severe asthma*:
  - 8X higher risk of death
  - 10X higher risk of hospital stays

Severe asthma accounts for majority of asthma costs⁶

* Compares severe uncontrolled asthma with severe controlled asthma
ICS, inhaled corticosteroids

⁴ Chung KF et al. Eur Respir J. 2014 Feb;43(2):343-73
⁵ To T et al. BioMed Central Public Health. 2012: 12(204)
⁷ Price D et al. NPJ Prim Care Respir Med 2014; 12; 24: 14009
Eosinophils are a therapeutic target in severe asthma
Persistent eosinophilia despite standard treatment is a recognized severe asthma phenotype

Eosinophilia is associated with increased risk of exacerbations and hospitalisations, and decreased lung function\(^1\)\(^-\)\(^5\)

- Exacerbations are a constant risk for severe asthma patients despite current treatments; exacerbations are the regulatory standard for drug approval and highly relevant for payers
- Patients are less able to breathe normally (reduced FEV\(_1\)) leading to frequent symptoms and reduced quality of life

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<table>
<thead>
<tr>
<th>Preferred controller choice</th>
<th>Other options</th>
<th>Reliever</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low dose ICS</td>
<td>Leukotriene receptor antagonist (LTRA) Low dose theophylline</td>
<td>As-needed short-acting beta_2-agonist (SABA)</td>
</tr>
</tbody>
</table>

### Step 1
Consider low dose ICS

### Step 2
Low dose ICS
Leukotriene receptor antagonist (LTRA) Low dose theophylline

### Step 3
Low dose ICS/LABA**
Med/High ICS/LABA
Add tiotropium*†
High dose ICS + LTRA (or +theoph*)
Add low dose OCS

### Step 4
Med/High ICS/LABA
Add tiotropium*†
High dose ICS + LTRA (or +theoph*)
Add low dose OCS

### Step 5
Refer for add-on treatment, e.g. tiotropium*†, omalizumab, mepolizumab*
As-needed SABA or low dose ICS/formoterol#

---

* Not for children <12 years.
** For children 6–11 years, the preferred Step 3 treatment is medium dose ICS.
# Low dose ICS/formoterol is the reliever medication for patients prescribed low dose budesonide/formoterol or low dose budesonide/formoterol maintenance and reliever therapy.
† Tiotropium by mist inhaler is an add-on treatment for patients with a history of exacerbations; it is not indicated in children <12 years.
2. Adelphi. RESPIRATORY DSP® X-XII (2011-14). EU5 USA Japan and China Asthma COPD.
**Step-care for asthma**

Approximately 40% of patients with severe asthma (step 4 or step 5 of GINA guidelines) remain uncontrolled on high-dose ICS + LABA

### GINA guidelines:

<table>
<thead>
<tr>
<th>Step 4</th>
<th>Step 5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Preferred controller choice</strong></td>
<td><strong>Refer for add-on treatment</strong></td>
</tr>
<tr>
<td>Med/High ICS/LABA</td>
<td>e.g. tiotropium*†, omalizumab, mepolizumab*</td>
</tr>
<tr>
<td>Other options</td>
<td>Add low dose OCS</td>
</tr>
<tr>
<td>Reliever</td>
<td>As needed SABA or low dose ICS/formoterol†</td>
</tr>
</tbody>
</table>

### IL-5 therapy currently available:

<table>
<thead>
<tr>
<th>Administration</th>
<th>Mepolizumab</th>
<th>Reslizumab</th>
</tr>
</thead>
<tbody>
<tr>
<td>100mg SC, Q4W (needs reconstituted)</td>
<td>3mg/kg IV infusion, Q4W</td>
<td></td>
</tr>
<tr>
<td>↓ exacerbations</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>↓ OCS use</td>
<td>✓</td>
<td>N/A</td>
</tr>
<tr>
<td>↑ lung function (FEV₁)</td>
<td>No consistent improvement</td>
<td>✓</td>
</tr>
<tr>
<td>Symptom (ACQ response³)</td>
<td>SGRQ</td>
<td>ACQ</td>
</tr>
</tbody>
</table>

* Not for children <12 years.
† Tiotropium by mist inhaler is the reliever medication for patients prescribed low dose budesonide/formoterol or low dose beclometasone/formoterol maintenance and reliever therapy.
‡ Low dose ICS/formoterol is the reliever medication for patients with a history of exacerbations; it is not indicated in children <12 years.

2. Adelphi. RESPIRATORY DSP® X-XII (2011-14). EU5 USA Japan and China Asthma COPD
3. Pavord 2012; Ortega 2014 (MENSA); Castro 2015 (BREATHE)
4. Saint George Respiratory Questionnaire; Asthma Control Questionnaire
Benralizumab (Anti-IL-5R α)
A targeted, anti-eosinophil therapy under investigation for asthma

- Anti-eosinophil monoclonal antibody that depletes eosinophils via antibody-dependent cell-mediated cytotoxicity (ADCC), the process by which natural killer cells are activated to target eosinophils
- Induces direct, rapid, and near complete depletion of eosinophils in the bone marrow, blood and target tissue

<table>
<thead>
<tr>
<th>Speed of peak effect in blood:</th>
<th>Extent of EOS reduction:</th>
<th>Extent of EOS reduction:</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 24 Hrs</td>
<td>96% (lung)</td>
<td>100% (bone marrow)</td>
</tr>
</tbody>
</table>

\[\text{benralizumab} \rightarrow \text{IL-5R}^\alpha \rightarrow \text{Eos} \rightarrow \text{NK} \rightarrow \text{Eos} \rightarrow \text{Eos} \]

\[\text{FcγRIII (CD16a)} \rightarrow \text{perforin granzyme} \]
Only benralizumab directly targets the eosinophil
Anti-cytokine modalities have an indirect effect on eosinophil function

- IL-13
- IL-5
- GM-CSF
- IL-3
- IL-4
- IL-33
- Leptin
- IL-25
- TSLP
- mepolizumab and reslizumab

Epithelia damage
In-situ differentiation
Environmental pathogens

GM-CSF=granulocyte-macrophage-colony stimulating factor; IL=interleukin; TSLP=thymic stromal lymphoprotein.
WINDWARD
Phase III benralizumab clinical programme in asthma

• Largest known Phase III clinical trial programme of any respiratory biologic in asthma
• Comprises six Phase III trials in 3,068 patients and 798 sites, across 26 countries

SIROCCO¹ and CALIMA² - Efficacy and safety trials of benralizumab in patients with severe asthma

ZONDA³ - Efficacy and safety trial of benralizumab to reduce oral corticosteroid use in patients with severe asthma on chronic OCS therapy

BISE⁴ - Efficacy and safety of benralizumab in patients with mild to moderate asthma

GREGALE⁵ - Functionality, reliability, and performance of the accessorised pre-filled syringe in an at-home setting

BORA⁶ - Safety extension trial of patients coming from SIROCCO, CALIMA, and ZONDA

Results from the Phase III SIROCCO and CALIMA trials in severe asthma

Dr Mark FitzGerald
Director, Centre for Heart and Lung Health, Vancouver Coastal Health Research Institute, University of British Columbia, Canada
Results from the Phase III SIROCCO and CALIMA trials in severe asthma

J Mark FitzGerald
Severe Asthma Clinic, VGH
University of British Columbia
Conflicts of Interest

- Research funding and/or honoraria from AstraZeneca, Boehringer-Ingelheim, Genentech, GlaxoSmithKline, Hoffmann-La Roche, MedImmune, Merck, Novartis
- BC Ministry of Health
- Member GINA Executive and of GINA Science Committee
## Common study objectives: To evaluate the safety and efficacy of benralizumab 30mg sc Q4W or Q8W in severe asthma

<table>
<thead>
<tr>
<th>PRIMARY ENDPOINT</th>
<th>• Annual rate of asthma exacerbations</th>
</tr>
</thead>
<tbody>
<tr>
<td>KEY SECONDARY ENDPOINTS</td>
<td>• FEV₁</td>
</tr>
<tr>
<td></td>
<td>• Total asthma symptom score</td>
</tr>
<tr>
<td>OTHER SECONDARY ENDPOINTS</td>
<td>• ACQ-6 score</td>
</tr>
<tr>
<td></td>
<td>• AQLQ(S)+12 score</td>
</tr>
</tbody>
</table>

The primary analysis population was patients receiving high-dosage ICS/LABA with blood eosinophils ≥300 cells/µL at baseline

Only primary and key secondary endpoints are multiplicity protected; all other p values are nominal.
Key inclusion criteria

• Males and females, aged 12–75 years
• Physician-diag. asthma requiring high-dosage ICS/LABA
  – Medium dose ICS/LABA cohort included in CALIMA
• ≥2 asthma exacerbations in the previous 12 months
• Symptomatic during run-in
SIROCCO (48 WK), CALIMA (56 WK): Common design
Planned 2:1 randomization ratio by eos (≥300/μL vs <300/μL)

**Visit 1**
- V2, V3; Run-in from V2–V4
- V4 (week 0)

**Run-in**
- V4–V7 (weeks 0–8)
- V8–V16 (weeks 12–44)
- V17 (week 48)

**Rand 1:1:1**
- Benralizumab 30mg SC every 4 weeks
- Benralizumab 30mg SC every 4 weeks
- Benralizumab 30mg SC every 8 weeks (ALT w placebo SC Q 8 week)
- Placebo SC every 4 weeks
- Placebo SC every 4 weeks

**Primary endpoint:**
AER in eosinophils ≥300/μL

<table>
<thead>
<tr>
<th>Visit</th>
<th>V2, V3; Run-in from V2–V4</th>
<th>V4–V7 (weeks 0–8)</th>
<th>V8–V16 (weeks 12–44)</th>
<th>V17 (week 48)</th>
<th>FU V18 (week 56)</th>
</tr>
</thead>
<tbody>
<tr>
<td>V4</td>
<td></td>
<td>V4–V7 (weeks 0–8)</td>
<td>V8–V18 (weeks 12–52)</td>
<td>V19 (week 56)</td>
<td>FU V20 (week 60)</td>
</tr>
</tbody>
</table>
Baseline disease state characteristics were consistent with an uncontrolled asthma population (full analysis set)

<table>
<thead>
<tr>
<th></th>
<th>SIROCCO</th>
<th>CALIMAa</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Benra Q4W N=399</td>
<td>Benra Q8W N=398</td>
</tr>
<tr>
<td>Gender: female, n (%)</td>
<td>275 (68.9)</td>
<td>252 (63.3)</td>
</tr>
<tr>
<td>Age (years), mean (SD)</td>
<td>50.1 (13.4)</td>
<td>47.6 (14.5)</td>
</tr>
<tr>
<td>Pre-BD FEV₁ (% PN), mean (SD)</td>
<td>57.4 (14.1)</td>
<td>56.1 (14.6)</td>
</tr>
<tr>
<td>ACQ-6 score, mean (SD)</td>
<td>2.8 (1.0)</td>
<td>2.8 (0.9)</td>
</tr>
<tr>
<td>Age (years) at diagnosis, median</td>
<td>35.1</td>
<td>31.4</td>
</tr>
<tr>
<td>Prior year exacerbations, mean (SD)</td>
<td>2.9 (1.8)</td>
<td>2.8 (1.5)</td>
</tr>
<tr>
<td>Atopic (phadiatop test), n (%)</td>
<td>231 (57.9)</td>
<td>244 (61.3)</td>
</tr>
<tr>
<td>Local eos (cells/µL), mean (SD)</td>
<td>491 (413.8)</td>
<td>470 (392.8)</td>
</tr>
<tr>
<td>Local eos ≥ 300 subgroup</td>
<td>638 (417.4)</td>
<td>620 (397.6)</td>
</tr>
</tbody>
</table>

*High and medium dose ICS combined.
ACQ-6=asthma control questionnaire 6; BD=bronchodilator; eos=baseline blood eosinophil count; FEV₁=forced expiratory volume in one second; PN=predicted normal; SD=standard deviation.
Benralizumab significantly reduced annual asthma exacerbation rate, AER

**SIROCCO (48 wks)**
-45%***

**CALIMA (56 wks)**
-28%*

*p<0.05; **p<0.01; ***p<0.001
eos, baseline blood eosinophil count; ICS, inhaled corticosteroid
SIROCCO and CALIMA: patients with ≥3 prior exacerbations

Benralizumab produced a similar magnitude of exacerbation reduction in higher risk patients

SIROCCO (48 wks)

-57%

-46%

CALIMA (56 wks)

-51%

-45%

N=118

N=102

N=103

N=97

N=102

N=95

Placebo  Benra Q4  Benra Q8
Prolonged time to first exacerbation

SIROCCO (48 wks)

CALIMA (56 wks)

ICS, inhaled corticosteroid
Benralizumab significantly improved lung function (FEV$_1^+$)

SIROCCO (48 wks)

Baseline Mean (mL) 1,654 1,673 1,660

- Placebo
- Benra Q4
- Benra Q8

**LS mean difference compared with baseline (L)**

+159 mL* 0.35 0.40
+106 mL**

Baseline Mean (mL) 1,815 1,750 1,758

**CALIMA (56 wks)**

+125 mL**

0.22 0.34 0.33

*p<0.05; **p<0.01; ¹Analysis via Negative binomial adjusting for treatment, region, exacerbations in previous year, OCS (Yes/No) eos, baseline blood eosinophil count; FEV$_1$, forced expiratory volume in one second; ICS, inhaled corticosteroid; LS, least squares; OCS, oral corticosteroid
Improvement in \( \text{FEV}_1 \) seen after the first dose of benralizumab; maintained throughout the treatment period.

**SIROCCO (48 wks)**

**Benra Q4**
- Mean at Baseline: Benra Q4: 1.673L
- Benra Q8: 1.660L
- Placebo: 1.654L

**Benra Q8**
- Mean at Baseline: Benra Q4: 1.750L
- Benra Q8: 1.758L
- Placebo: 1.815L

**Placebo**
- Mean at Baseline: Placebo: 1.654L

**56/48 wks**

<table>
<thead>
<tr>
<th>Group</th>
<th>LS MEANS</th>
<th>LS MEAN Difference (95% CI)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q4 – Placebo</td>
<td>0.345 vs 0.239</td>
<td>0.106 (0.016, 0.198); p=0.022</td>
<td></td>
</tr>
<tr>
<td>Q8 - placebo</td>
<td>0.398 vs 0.239</td>
<td>0.159 (0.068, 0.249); p=0.001</td>
<td></td>
</tr>
</tbody>
</table>

**CALIMA (56 wks)**

**Benra Q4**
- Mean at Baseline: Benra Q4: 1.750L
- Benra Q8: 1.758L
- Placebo: 1.815L

**Benra Q8**
- Mean at Baseline: Benra Q4: 1.673L
- Benra Q8: 1.660L
- Placebo: 1.654L

**Placebo**
- Mean at Baseline: Placebo: 1.654L

**56/48 wks**

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<th>p-value</th>
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<tbody>
<tr>
<td>Q4 – Placebo</td>
<td>0.340 vs 0.215</td>
<td>0.125 (0.037, 0.213); p=0.005</td>
<td></td>
</tr>
<tr>
<td>Q8 - placebo</td>
<td>0.330 vs 0.215</td>
<td>0.116 (0.028, 0.204); p=0.010</td>
<td></td>
</tr>
</tbody>
</table>

*p<0.05 Benra Q4 vs placebo; +p<0.05 Benra Q8 vs placebo; error bars represent 95% CIs; analysis via mixed effect model repeat measurement (baseline, oral corticosteroid use, region, treatment, treatment duration)

CI, confidence interval; FEV1, forced expiratory volume in one second; LS, least squares.
SIROCCO and CALIMA: patients with ≥3 prior exacerbations

Benralizumab produced a greater magnitude of lung function improvement in higher risk patients

SIROCCO (48 wks)

- Placebo: 251
- Benra Q4W: 358
- LS mean change in FEV₁ (mL): 235 mL*

CALIMA (56 wks)

- Placebo: 174
- Benra Q4W: 326
- Benra Q8W: 486
- LS mean change in FEV₁ (mL): 265 mL***

**Data for CALIMA from high-dosage ICS cohort

*P=0.0018; **P=0.1510; ***P=0.0006; †P=0.0481

benra=benralizumab; eos=baseline blood eosinophil count; FEV₁=forced expiratory volume in 1 second; LS=least squares; Q4W=every 4 weeks; Q8W=every 8 weeks.
Benralizumab Q8W significantly improved total daily asthma symptom score compared to placebo

Patient reported measures of control (ACQ6 score) and quality of life (AQLQ score) also improved with benralizumab Q8W in both trials, with responder analyses favoring treatment

*P<0.05.

Analysis via mixed effect model repeat measurement adjusting for treatment, region, baseline, OCS (Yes/No).
eos=baseline blood eosinophil count; ICS=inhaled corticosteroid; LS=least squares; Q4W=every 4 weeks; Q8W=every 8 weeks.
The overall and serious adverse event (AE) frequencies in both studies were similar for benralizumab and placebo in each study

- The most common AEs (≥ 5%) were consistent with an uncontrolled asthma population
- Imbalance in the frequency of DAEs: mostly single events with no trend in types of events
- ADA response detected in 10-15%: no apparent impact on efficacy or safety

<table>
<thead>
<tr>
<th></th>
<th>SIROCCO (48 Weeks)</th>
<th>CALIMA (56 Weeks)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Benra Q4 n=403</td>
<td>Benra Q8 n=394</td>
</tr>
<tr>
<td>Any Adverse Event</td>
<td>293 (72.7)</td>
<td>281 (71.3)</td>
</tr>
<tr>
<td>Any Serious Adverse Events (SAE)</td>
<td>47 (11.7)</td>
<td>52 (13.2)</td>
</tr>
<tr>
<td>Any Discontinuation Adverse Event (DAE)</td>
<td>9 (2.2)</td>
<td>8 (2.0)</td>
</tr>
<tr>
<td>Injection site reactions</td>
<td>16 (4.0)</td>
<td>9 (2.3)</td>
</tr>
<tr>
<td>Hypersensitivity AEs</td>
<td>13 (3.2)</td>
<td>11 (2.8)</td>
</tr>
<tr>
<td>Any AE outcome = death*</td>
<td>2 (0.5)</td>
<td>1 (0.3)</td>
</tr>
</tbody>
</table>

*No death was assessed as treatment-related

AE, adverse event; DAE, drug-related AE; SAE, serious AE; ADA, anti-drug anti-body; IP, investigational product
Conclusions: Benralizumab 30mg sc significantly improved multiple measures of asthma control in two Phase 3 trials

- In patients with severe eosinophilic asthma uncontrolled on standard-of-care ICS/LABA treatment, benralizumab:
  - Reduced annual asthma exacerbation rates (up to 51%)
  - Improved lung function (up to 159 mL in FEV$_1$): improvements observed after first dose and sustained throughout treatment
  - Improved daily asthma symptoms, such as wheeze, cough and shortness of breath
  - Improved patient reported measures of asthma control and quality of life
- Efficacy results achieved for Q8W dosing were similar or numerically larger than for Q4W dosing regimen
- Frequency and nature of adverse events similar to placebo
- Benralizumab unique anti-eosinophil mechanism of action represents a new option for the treatment of severe eosinophilic asthma
Dr Andrew Menzies-Gow
Consultant in Respiratory Medicine, and Director, Lung Division, Royal Brompton Hospital, London
How do you define a patient with ‘severe asthma’? How are they treated with today’s standard of care? What are the greatest remaining unmet needs?
How important is exacerbation history? What is the relationship between eosinophil levels and asthma severity?
How does benralizumab compare versus current therapies? What’s your view?
What will it take for biologics to be a greater part of asthma care? How do healthcare systems need to evolve?
Looking forward

Tom Keith-Roach
Head of Global Product & Portfolio Strategy, Respiratory, AstraZeneca
Benralizumab regulatory submission expected in H2 2016

Regulatory submission

~6,850

Patients in largest respiratory biologic programme in asthma and COPD

Key
- Asthma
- COPD

BISE completed*

SIROCCO completed*

CALIMA completed*

GREGALE

ZONDA

2016

2017

2018

2019

TERRANOVA

GALATHEA

BORA

ALIZE

ARIA

MELTEMII

*Block colour denotes completed trial
High economic burden and a clear unmet need will continue to drive the severe asthma and COPD market

Asthma, 2015, G12 Markets¹, ²

- Global Prevalence: 315
- G12 markets: 103
- Diagnosed: 69
- Treated: 55
- Maintenance: 38
- Severe asthma: 5
- Uncontrolled: 2

Asthma, rates¹
- Prevalence: 315
- Diagnosis: 68%
- Treatment: 77%
- Biologic: 9%

COPD, 2015, G12 Markets¹, ²

- Global Prevalence: 329
- G12 markets: 122
- Diagnosed: 47
- Treated: 38
- Maintenance: 21
- Severe COPD: 3
- Uncontrolled: 2

COPD, rates¹
- Prevalence: 345
- Diagnosis: 39%
- Treatment: 80%
- Biologic: 0%

¹ AstraZeneca analysis supported by Decision Resources, IMS MIDAS and IMS longitudinal data and other specific country sources
² Markets include: US, EU5 (United Kingdom, Germany, Italy, France, Spain), Japan, China, Canada, Australia, Brazil and Russia
**Summary**

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<th>Positive Phase III data with SIROCCO and CALIMA</th>
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Lung function improvements at 4-weeks; sustained at 52-weeks

Convenient dosing
Q&A
Investor science conference call
European Respiratory Society

07 September 2016