Professor Mario Cazzola: prospect of the COPD medicine

Submitted Dec 15, 2014. Accepted for publication Dec 18, 2014.
doi: 10.3978/j.issn.2072-1439.2014.12.38
View this article at: http://dx.doi.org/10.3978/j.issn.2072-1439.2014.12.38

Mario Cazzola (*Figure 1*) is a Professor of Respiratory Medicine and Director of the Postgraduate School of Respiratory Medicine at the University of Rome 'Tor Vergata', Rome, Italy, where he is also Chief of the Respiratory Clinical Pharmacology Unit. He is Honorary Professor at the Sackler Institute of Pulmonary Pharmacology, GKT School of Biomedical Sciences, London, UK. He is the author or co-author of almost 500 scientific papers.

He founded Therapeutic Advances in Respiratory Diseases and served as its first Editor-in-Chief. He is serving as the Editor-in-Chief for Pulmonary Pharmacology & Therapeutics, an Associate Editor for Respiratory Medicine, for Respiratory Research, and for Clinical Investigation, and a Section Editor for The Open Respiratory Medicine Journal.

He was the Chairman of the Airway Pharmacology and Treatment Group, the Secretary of the Inflammatory Airway Diseases and Clinical Allergy Assembly and the Postgraduate Courses Director at the European Respiratory Society. He was the co-chairman of the European Respiratory Society/American Thoracic Society Task Force "Outcomes for COPD pharmacological trials: from lung function to biomarkers". He is a member of the steering committee of the Airway Disorders Network and is serving as Governor of the Italian Chapter at the American College of Chest Physicians. He is the Chairman of the Southern Europe Chapter at Interasma, and the Chair of the Med COPD Forum.

In 2014, Prof. Mario Cazzola's outstanding article "The role of indacaterol for chronic obstructive pulmonary disease (COPD)" published on *Journal of Thoracic Disease (JTD)* has been globally well-received. To meet the large demand of its international readers, this article has come out in three languages: English, Italian and Chinese. Beginning with the successful article, JTD has a special interview with Prof. Mario Cazzola.

JTD: What do you think has made "The role of indacaterol for chronic obstructive pulmonary disease (COPD)" so popular?

Prof. Cazzola: I honestly do not know the answer to this question. In writing this article, we simply included all the information we hold and we illustrated and commented it in the most unbiased manner. Probably, colleagues acknowledge that our group has a good credibility in the field of bronchodilators and, consequently, they trust our opinion.

Figure 1 Professor Mario Cazzola.

JTD: As a leading expert on COPD, would you like to retrospectively comment on the content of your own article?

Prof. Cazzola: I do not think there is anything more to add except to suggest colleagues to read the paper critically and to compare their experience with what has been described on it. However, I hope that all will agree that the duration of bronchodilation seems to determine the clinical efficacy of bronchodilators in COPD, although agents with a rapid onset of action could be more effective on nocturnal and morning symptoms than those with a relatively slow onset of action. The need for a rapid onset of action and a long duration of the broncholytic effect is the likely reason for the development of new LABAs that are fast acting and have true 24 h duration of action. Indacaterol is the archetype of once-daily LABAs, which I prefer to call ultra-LABAs

to differentiate them from traditional LABAs that have a duration of action of 12 hours.

JTD: What are the major limitations in the medicine for COPD at present? What do you think is the main trend in the future development of COPD medicine?

Prof. Cazzola: International guidelines try to simplify the diagnosis and treatment of patients affected by COPD. However, there is an enormous variability in the response to drugs between patients suffering from this morbid condition. For this reason, it is fundamental to identify the characteristics of patients that predict response to drugs used to manage COPD. Individualized therapy allows administration of the right treatment to the right patient, increasing, in this way, the subject's response to therapy, avoiding treatments not indicated and reducing the onset of adverse effects.

JTD: I've found the last part of your article on "positioning indacaterol in the therapeutic scheme of COPD" to be both original and fascinating. How will this affect the current treatment option for COPD?

Prof. Cazzola: We thought it was important to highlight where we place indacaterol, and probably where we will place the new ultra-LABAs such as olodaterol and vilanterol, in the therapeutic scheme proposed by GOLD. In truth, this is a simplification because the evidence that emerged in recent years makes us think properly that the choice of bronchodilator to start treatment with in a patient with COPD mainly depends on the outcome of interest. LABAs are more effective than LAMAs if we consider symptoms or health-related quality of life as the primary outcome, whereas in frequent exacerbators, it seems preferable to use a LAMA. In any case, a critical evaluation of the most recent literature let us to confirm our opinion that it is preferable to initiate the treatment of the patient with mild/moderate stable COPD, at least those who are not frequent exacerbators, choosing indacaterol.

JTD: The studies have well proved the positive effectiveness of indacaterol on COPD. Is there anything that the patients or doctors should pay attention to when they are using indacaterol for the treatment of COPD?

Prof. Cazzola: I do not think there is a specific problem related to the use of indacaterol in COPD patients. Rather, there are still fundamental questions regarding bronchodilators in general that require clarification to optimise their utilisation. I still wonder if it is appropriate to treat all COPD patients with long-acting bronchodilators, it is better to start with a β_2-agonist or with an anti-muscarinic agent, it is useful to use a bronchodilator with a rapid onset of action, and also if once- or twice-daily dosing is preferable. Moreover, it is important to understand when we can add a second bronchodilator with a different mechanism of action, and when we must add an ICS.

JTD: What do you think of the drug resistance of indacaterol in the future? What should be done to better avoid its drug resistance? Otherwise, how many years will it take to develop the drug resistance?

Prof. Cazzola: Tolerance to the bronchodilator effects of LABAs may occur with their prolonged use in COPD. In particular, high-efficacy β_2-agonists may cause a greater loss of receptors and it is likely that relevant tolerance to rescue salbutamol treatment could be more likely with β_2-agonists that are able of a really long residency at the β_2-adrenoceptor. In effect, in many stable COPD patients under regular treatment with a conventional dose of indacaterol 150 μg, an additional dose of indacaterol 150 μg, which is allowed in Europe, does not induce any substantial improvement in lung function, but I think this is more related to a ceiling broncholytic effect rather than to the appearance of tolerance. In fact, it has been shown that a regular treatment with indacaterol does not alter bronchodilator response to repeated doses of salbutamol. In any case, it seems reasonable and safe to increase the dose of indacaterol in those stable COPD patients who are under regular therapy with indacaterol 150 μg from which they do not draw the maximum benefit because they are unable to perceive bronchodilation.

Acknowledgements

Disclosure: The author declares no conflict of interest.

(Science Editor: Melanie C. He, JTD, jtd@thepbpc.org)

Cite this article as: He MC. Professor Mario Cazzola: prospect of the COPD medicine. J Thorac Dis 2014;6(12):1886-1887. doi: 10.3978/j.issn.2072-1439.2014.12.38

