Patient and physician perspectives on biological treatment in severe asthma: a Severe Asthma Network Italy survey

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To the Editor:

Adherence to medication treatment is crucial for therapeutic success, with nonadherence and nonpersistence in therapy leading to suboptimal outcomes and inappropriate economic burdens on the healthcare system [1]. Targeted biologic therapies have revolutionised severe asthma management, with lessened exacerbations and use of systemic steroids, and improved clinical outcomes and quality of life [2]. However, biologics are costly contributors to healthcare monetary outlays; hence, monitoring patients' adherence and persistence in treatment is crucial.

Barriers to adherence in patients with asthma are various and complex. Patients' beliefs about their medication, such as the perceived need for it, ineffectiveness and safety/tolerability issues, as well as general concerns about medication use and long-term pharmacotherapy, may influence treatment adherence behaviour [3]. Overall adherence to asthma controller medications, which are self-administered daily, is relatively poor [4]. However, adherence to asthma biologics might be different because biologics are administered *via* injection every 2–8 weeks, generally under direct supervision in hospital settings. Moreover, auto-injectable biologics might improve adherence by allowing at-home administration, minimising logistical difficulties and time waste. The availability and actual use of biologics for severe asthma is increasing, yet limited evidence is available about adherence to asthma biologics [5–10].

A survey was designed to investigate patients' beliefs, perspectives, concerns and perceived adherence to their biological therapies and physicians' perspectives on their patients' adherence and commitment to biological anti-asthma treatments. The physician survey questionnaire consisted of 17 closed questions addressing their professional profiles and experience in managing severe asthma, perception of their patient's adherence to both asthma inhalers and biologics and barriers to adherence as well as benefits and concerns regarding auto-administration. The patient survey questionnaire consisted of 35 questions, including general characteristics of respondents, perceived benefits, side-effects and satisfaction with biological treatment, perceived treatment adherence, as well as advantages, drawbacks and barriers to self-administration. The survey questionnaire was designed in the Italian language only and implemented using Research Electronic Data Capture (REDCap). The survey questionnaires were created through a process of consensus among four respiratory physicians (C. Crimi, G.E. Carpagnano, C. Calabrese, M. D'Amato). Pilot testing was performed by the Severe Asthma Network Italy (SANI) network steering committee [11]. Then, a final round of comments and corrections was performed to create the final version. All the authors approved the final version of the surveys, and the full lists of survey questions are available on reasonable request.

Between 15 July and 30 September 2022, SANI secretarial staff emailed the survey web link to representatives of severe asthma patient associations, asking them to distribute the survey among their affiliates. Only those who agreed to participate in the online survey received the link to the 35-question questionnaire. Additionally, this SANI survey was disseminated using the network's channels, such as internal members' newsletters and an open webinar. The data collected were recorded and stored in the REDCap database system hosted at SANI headquarters. The reporting of this survey followed the Checklist for Reporting of Survey Studies [12]. Answering all questions was mandatory, with no blank fields allowed; thus, no imputation for missing data was performed. The overall data were analysed with descriptive statistics (proportions for categorical variables and medians for continuous ones).

Shareable abstract (@ERSpublications)
Patients with severe asthma perceive beneficial effects of biologics and good self-reported adherence to treatment, even when self-administered at home https://bit.ly/48vP70w

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190 responses were registered and analysed; 116 from patients and 74 from healthcare providers. 80% of the surveyed patients had severe asthma for >5 years, with 96.5% being treated with biologics for ⩾2 years (42.1% with mepolizumab, 27.1 with dupilumab, 20.6% with omalizumab, 10.6 with benralizumab). Inhalation therapy while on biological treatment was continued by 89.1% of patients and most believe that it plays a crucial role in their asthma management. More than 95% of the patients confirmed good adherence to their biological medication. More than 80% of them had received detailed information on the biological treatment before starting it. Almost all patients were satisfied, believed they had benefited from it, and wished to continue receiving their biologics (figure 1). Furthermore, >60% of the patient respondents agreed or strongly agreed with the sentence stating "I have discontinued systemic corticosteroids". Hospital administration was perceived as a burden for one-third of those who did not self-administer their biologics at home, but it had only a minimal impact on patients' self-reported adherence. However, 85.5% of patients self-administered their biological therapy at home and attended their reference centres (every 6 months for 57.3% of patients) only for routine spirometry, biomarkers and quality-of-life monitoring. More than 60% of patients self-administered the injection, while in approximately one-third it is performed by friends or relatives, and by a nurse in only 5%. Almost all patients are satisfied with self-administration of biologics at home, believe that is easy to perform and would recommend it to other patients. 44% of patients were engaged in patient support programmes, considered helpful by 93.5% of participants and recommended by 73.7% of healthcare providers.

Physicians were mainly allergologists (57.4%) and pulmonologists (41.3%), with the majority (89%) working in public hospitals, and primarily in academic centres (62%). More than half of the healthcare providers reported treating >50 patients with severe asthma per year. More than half of healthcare providers prescribed biological therapies to >70% of their patients with severe asthma, favouring auto-administration in more than half of prescriptions. Nevertheless, only 37.3% of healthcare providers believe that self-administration improves adherence compared with hospital-based administration. More than 80% of healthcare providers were satisfied with their patients' adherence to biological therapy; satisfaction with inhalation therapy adherence was perceived to be only minimally lower (77.7%). Healthcare providers considered poor awareness of the risks of severe asthma (88%) and fear of adverse effects (57.4%) as the

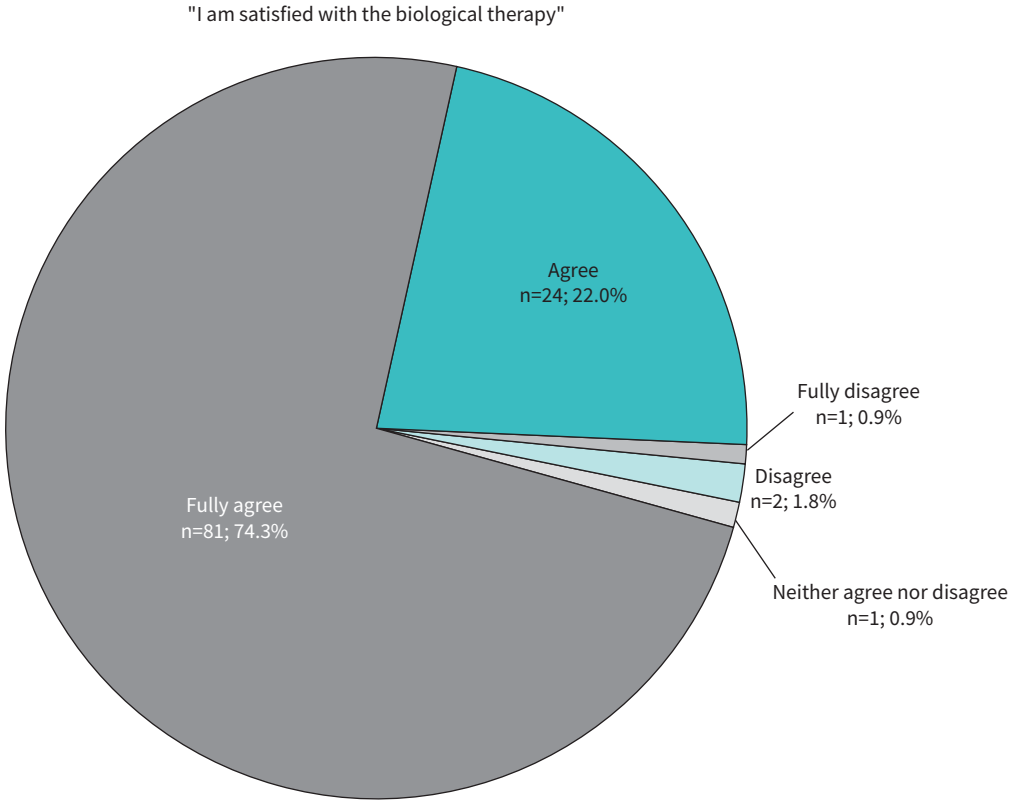

FIGURE 1 Satisfaction with their biological therapy of surveyed patients with severe asthma.

major drivers of patients' perceived inadequate adherence. In contrast, for most healthcare providers, the prompt improvement of asthma symptoms following biological therapy favours its adherence.

According to 68.6% of surveyed physicians, the subjects who refuse self-administration are afraid that it might be troublesome; a risk also reported by 66.7% of surveyed patients. Simplifying procedures and providing more effective and widespread information emerged as a crucial aspect for the surveyed healthcare providers (26.3%) and patients (26.1%), and it was considered helpful to further boost the already extensive acceptance of biologics self-administration by severe asthma patients.

This was the first cross-sectional study exploring severe asthma patients' self-reported adherence to biologic treatment and auto-administration. These survey findings might help healthcare institutions and policymakers in developing training, educational and monitoring programmes to reduce nonadherence risks in severe asthma patients and identify ideas for other quality improvement programmes. Our study has several limitations. First, estimating response rates to predict the representativeness of the sample was not possible due to the multiple strategies adopted to distribute the survey. Second, the geographical distribution of the responses was not homogeneous. Moreover, treatment adherence was based on patient self-reporting and was not confirmed by objective measures or on-site data validation; this implies that collected data may reflect personal views rather than actual practice. However, patients completed the questionnaires in private and anonymously to answer honestly without worrying about censure. Moreover, as in every survey, the study is assessing perceptions rather than actual data collection on patients. Lastly, we did not measure any patient-related outcomes.

In conclusion, data from this nationwide survey demonstrate that patients' favourable biological treatment attitudes are associated with good self-reported adherence to the treatment. Barriers and concerns of starting self-administration still exist for both patients and physicians; however, patients who experienced self-administration would highly recommend it to other patients and highly value the patient support programmes. In addition, self-administration of biological therapy at home did not impair patients' perceived adherence to the treatment compared with hospital-administration. Specific training, education and programmes to monitor adherence of severe asthma patients should be granted by hospitals, institutions and policymakers. These findings might be helpful in tailoring interventions to increase adherence in individual patients and promote treatment self-administration.

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