

Transition of Adolescents With Severe Asthma From Pediatric to Adult Care in Spain: The STAR Consensus

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■ Abstract

Objective: To assess the degree of consensus among a multidisciplinary expert panel on the transition of adolescents with severe asthma from pediatric to adult care.

Methods: A 61-item survey was developed based on guidelines for other chronic diseases, covering transition planning, preparation, effective transfer, and follow-up. A 2-round Delphi process assessed the degree of consensus among 98 experts (49 pediatricians, 24 allergists, and 25 pulmonologists). Consensus was established with $\geq 70\%$ agreement.

Results: Consensus was reached for 42 items (70%). Panelists were unable to agree on an age range for initiation of transition. The main goal during the transition identified by the experts is for adolescents to gain autonomy in managing severe asthma and prescribed treatments. The panelists agreed on the importance of developing an individualized plan, promoting patient autonomy, and identifying factors associated with the home environment. They agreed that the adult health care team should have expertise in severe asthma, biologics, and management of adolescent patients. Pediatric and adult health care teams should share clinical information, agree on the criteria for maintaining biological therapy, and have an on-site joint visit with the patient before the effective transfer. Adult health care professionals should closely follow the patient after the effective transfer to ensure correct inhaler technique, adherence, and attendance at health care appointments.

Conclusions: This consensus document provides the first roadmap for Spanish pediatric and adult teams to ensure that key aspects of the transition process in severe asthma are covered. The implementation of these recommendations will improve the quality of care offered to the patient.

Key words: Adolescent. Consensus. Delphi process. Pediatric patient. Severe asthma. Transition process. Recommendations. Biologics.

■ Resumen

Objetivo: Evaluar el grado de consenso con un panel multidisciplinar de expertos sobre la transición del adolescente con asma grave de los servicios de pediatría a atención de adultos.

Métodos: Se elaboró un cuestionario de 61 ítems basado en recomendaciones de transición para otras patologías crónicas, abarcando la planificación de la transición, preparación, transferencia efectiva y seguimiento. Se evaluó el nivel de consenso entre 98 expertos (49 pediatras, 24 alergólogos y 25 neumólogos) mediante un proceso Delphi de dos rondas. El consenso se estableció con un acuerdo $\geq 70\%$.

Resultados: Cuarenta y dos ítems (70%) alcanzaron consenso. Los panelistas no alcanzaron consenso en el rango de edad para iniciar la transición. El principal objetivo a conseguir durante la transición según los expertos fue que el adolescente gane autonomía en el manejo

del asma grave y tratamientos prescritos. Asimismo, alcanzaron acuerdo en la importancia de desarrollar un plan individualizado, promover la autonomía del paciente e identificar los factores clave en el entorno familiar. Los especialistas de adultos deben tener experiencia en asma grave y tratamientos biológicos, así como en el manejo de pacientes adolescentes. Los equipos sanitarios de pediatría y de adultos deben compartir la información clínica, consensuar los criterios para mantener la terapia biológica y realizar una visita conjunta con el paciente antes de la transferencia. Los especialistas de adultos deben realizar un seguimiento estrecho del paciente tras la transferencia para asegurar una correcta técnica inhalatoria, el cumplimiento del tratamiento y la asistencia a las citas sanitarias.

Conclusiones: Este documento de consenso proporciona la primera hoja de ruta en España para que los equipos especialistas de pediatría y adultos garanticen aspectos clave del proceso de transición en pacientes adolescentes con asma grave. La aplicación de estas recomendaciones redundará en la mejora de la calidad asistencial ofrecida al paciente.

Palabras clave: Adolescente. Consenso. Metodología Delphi. Paciente pediátrico. Asma grave. Proceso de transición. Recomendaciones. Biológicos.

Summary box

• What do we know about this topic?

An unstructured and poorly planned transition in adolescents with severe asthma increases the risk exacerbations, worsens asthma symptoms, and causes considerable emotional distress for the patient.

• How does this study impact our current understanding and/or clinical management of this topic?

The present consensus document provides a comprehensive roadmap to ensure that both the adolescent patient and the pediatric and adult specialists fully address the fundamental aspects of the transition process.

Introduction

Pediatric patients with severe asthma (SA) experience frequent exacerbations and impaired quality of life [1,2]. Among children with asthma, rates of depression and anxiety are higher for those diagnosed with SA [3-6]. These complications can worsen during adolescence, a challenging period characterized by constant physical, emotional, and psychosocial changes [7]. Other potential complications during adolescence are risk-taking behaviors such as substance abuse, denial attitudes, lack of adherence, and disease worsening due to changes in sex hormones, often leading to poor asthma control [7,8].

In patients with chronic diseases, adolescence is also characterized by the transition from pediatric to adult care [7]. Various guidelines support the importance of a planned and coordinated transition [9-12] to avoid high rates of complications and hospital admissions, lower adherence, and the discontinuity of care reported in unstructured processes [10,13,14].

Guidelines have been published for the transition of adolescents with chronic conditions such as diabetes, cystic fibrosis [15], congenital heart disease [16], and rheumatological diseases [17], as well as for those with special health care needs [18]. A guideline covering the transition of adolescents and young adults with allergy and asthma was recently published by the European Academy of Allergy and Clinical Immunology (EAACI) [9]. This document emphasizes the need for early initiation of transition, involving multidisciplinary teams and providing patients with knowledge and resources to manage asthma effectively. However, it does not provide

specific recommendations for difficult-to-treat SA, a disease commonly managed in hospital care settings [19]. Recent evidence suggests that an unstructured, poorly planned transition process, or the lack of it, increases the risk of SA patients being lost to follow-up in the transition to adult care [20,21].

In this context of limited guidance, the objective of the STAR Consensus (*transición del paciente adolescente con Asma grave* [Transition of adolescent patients with severe asthma]) was to develop recommendations on the transition of adolescents with SA to adult care based on the degree of consensus established by a multidisciplinary expert panel.

Methods

The consensus document process comprised the following steps: (1) constitution of the Scientific Committee and selection of panelists; (2) development of the survey; (3) Delphi rounds; (4) data analysis; and (5) meeting of the Scientific Committee for discussion at which the checklist was designed and recommendations on the transition of adolescents to adult care were made.

Constitution of the Scientific Committee and Selection of Panelists

The Scientific Committee comprised 9 hospital-based experts: 6 pediatric pulmonologists/allergists, 2 allergists, and 1 pulmonologist, all of whom had recognized expertise in SA. The Scientific Committee established the following criteria for selection of participating hospital-based pediatricians and

adult specialists (pulmonologists and allergists) as panelists in the Delphi survey:

- Pediatric pulmonologists/allergists: (a) ≥ 5 years of experience in the management of children and adolescents with SA; and (b) seeing at least 5 patients with SA each month and/or visiting patients with SA in asthma units.
- Pulmonologist/allergist: (a) ≥ 5 years of experience in the management of patients with SA; (b) seeing at least 5 patients with SA each month; and (c) visiting patients with SA in asthma units.

The sample comprised 100 panelists (50 pediatricians, 25 allergists, 25 pulmonologists). No formal sample size calculation was performed. All panelists attended SA patients in a hospital setting.

Development of the Survey

The PubMed database was searched to identify peer-reviewed publications in English and Spanish up to January 2020. The search terms used were as follows: guidelines, consensus, transition process, transfer, severe asthma, adolescent patient, pediatric patient. The Scientific Committee developed a 61-item survey based on the literature review.

The survey was structured into transition planning and the transition process. The latter was further divided into preparation, effective transfer, and follow-up. Transition planning refers to the period before the transition, in which the characteristics of the candidate to be transferred and the goals to be achieved during the process are defined. The preparation phase comprises the period from patient selection until the patient is ready for transfer. During the effective transfer, the adolescent is managed by pediatric and adult health care teams until patient care is provided only in adult departments, ie, the point at which the follow-up phase begins.

Delphi Rounds

The Delphi method [22] was used to assess the level of consensus for each survey item. Each of the participating panelists rated each item online and anonymously on a 9-point Likert scale (1 = totally disagree, 9 = totally agree) in a 2-round Delphi process. Consensus was established when $\geq 70\%$ of experts scored the item 1-3 (disagreement consensus) or 7-9 (agreement consensus). An item with no consensus (neutral consensus) was defined as an item not reaching either agreement or disagreement consensus. The scores of items not reaching consensus in the first round were shown to the panelists, who were then asked to re-rate the item in a second round. After rating each of the items of the survey, panelists were presented with a question asking them to estimate the overall duration of the transition process in months.

To gain an insight into the reasons behind items with no consensus on the first round, a series of open questions were presented to the panelists during the second round, as follows:

- In your opinion, what would be the most appropriate time to start the transition process?
- In your hospital, what is the most common age of SA patients when they are transferred to adult care? (question put to pediatricians)

III. Considering your agreement with the process described in this document and the results of the first round:

- How applicable do you consider this process to be in your routine? How would you implement it in your clinical practice?
- What are the barriers that you would need to overcome to implement this transition process in your hospital?

Data Analysis

Comparisons between Delphi rounds were made using the Bowker test, with a 2-sided significance level of .05. The characteristics of the panelists were evaluated using descriptive statistics.

Scientific Committee Discussion Meeting: Development of Checklist and Recommendations on the Transition of Adolescents to Adult Care

Once the 2 Delphi rounds were complete, the Scientific Committee discussed the results and defined the recommendations based on the items for which consensus was reached. The Committee also developed a checklist with key patient clinical details to be shared between pediatric and adult departments at the transfer stage (Supplementary Figure 2).

Table 1. Characteristics of the Expert Panel (N=98).

Characteristics	
Women, No. (%)	49 (50%)
Age, y, mean (range)	47.8 (33-68)
Specialty	
Pediatrics ^a , No. (%)	49 (50%)
Allergy, No. (%)	24 (24.5%)
Pulmonology, No. (%)	25 (25.5%)
Working in a tertiary level hospital	81 (82.7%) ^b
Working in a secondary level hospital	16 (16.3%) ^b
>10 years of experience in the management of severe asthma patients	64 (65.3%)
5-10 years of experience in the management of severe asthma patients	34 (34.7%)
Patients with asthma treated per month, mean (SD)	99 (53)
Percentage of severe asthma patients treated per month among total asthma patients	
Pediatricians, mean	12.6%
Allergists, mean	20.3%
Pulmonologists, mean	47.7%
Proportion of panelists who reported not having a transition protocol for severe asthma patients in their hospitals	86.7%

^aSubspecialty: allergy (n=30), pulmonology (n=12), both allergy and pulmonology (n=6), not reported (n=1).

^bOne panelist (1%) reported working in a primary level hospital.

Results

Expert Panel

All 100 expert panelists agreed to participate in the Delphi process, and 98 (49 pediatric pulmonologists/allergists, 24 allergists and 25 pulmonologists) completed 2 Delphi rounds between June and October 2020. The demographic characteristics are described in Table 1.

Panelists treated a similar number of asthma patients per month across specialties (overall sample, mean [SD], 99 [53]; pediatricians, 100 [55]; allergists, 102 [47]; pulmonologists, 96 [56]). Among the total number of patients with asthma, pediatricians, allergists, and pulmonologists saw 12.6%, 20.3%, and 47.7% of patients with SA, respectively. The proportion of patients with SA receiving biological therapy was 51.6% (54.1% in pediatrics, 53.8% in allergy, and 44.4% in pulmonology, respectively).

Most patients (99.7%) with SA treated in the pediatric department were aged <18 years, while most patients with SA treated in the pulmonology and allergy departments were aged >18 years (95.7% and 81%, respectively) (Supplementary Figure 1). Panelists were asked about the presence of (or absence of) a transition protocol for adolescents with SA at their hospitals. Of these, 86.7% indicated the lack of an established transition protocol at their centers.

Delphi Results

Agreement was reached for 42/61 items (70%) in the first Delphi round (Tables 2-5). No consensus was reached in the second round for items for which no consensus was reached in the first round. No disagreement was recorded for any of the items.

Transition Planning

When asked about the age range for initiation of the transition process, no consensus was reached for any of the surveyed items (Table 2, Supplementary Table 1). Given this absence of consensus, 2 open questions were added in the second Delphi round to identify trends in the patient's age when planning the transition. Most of the panelists (89%) mentioned age (age range or an age threshold) as the most appropriate criterion the transition process, with 14-16 years and >14 years being the most common answers (question I). Over two-thirds (69%) of the pediatricians indicated that SA patients are commonly transferred to adult care when they are ≥14 years old (question II).

Consensus was achieved for most of the items describing the goals to set with the patient during the transition process. These items focused mainly on developing patient health literacy on SA and adequate adherence. The need for patients

Table 2. Transition Planning.

Item	% of agreement ^a	
	1 st round	2 nd round
Pediatricians should formally start the transition process when the patient...		
Turns 12-14 years old	25 ^b	35 ^b
Turns 14-16 years old	56 ^b	69 ^b
Turns 16-18 years old	50 ^b	39 ^b
Shows an adequate degree of maturity, regardless of the biological age	47 ^b	36 ^b
And/or parents/guardians request the transition to adult care	28 ^b	16 ^b
During the transition process, the health care team should aim for the adolescent patients to...		
Reach a degree of maturity so that they can responsibly manage severe asthma ^c	96	-
Correctly identify severe asthma features ^c	95	-
Identify each of the prescribed medications, understand the reason for their prescription, and know how and when to take them ^c	92	-
Demonstrate correct inhaler technique ^c	91	-
Adhere to prescribed maintenance treatments without family supervision ^c	90	-
Correctly identify the prescribed biological therapy, posology, and the reason for the prescription (in case of biological treatment) ^c	89	-
Reach a level of maturity so they can become the main interlocutor with adult care specialists ^c	82	-
Have a home environment that favors their independence as a patient ^c	79	-
Be able to attend follow-up visits on their own, unaccompanied	50 ^b	32 ^b

^aOnly items with no consensus in the first round were voted in the second round. The results of both rounds are shown for those items not reaching consensus in the first round.

^bItems with no consensus in the first/second round.

^cItems with agreement consensus.

Table 3. Transition Process: Preparation Stage.

Item	% of agreement ^a	
	1 st round	2 nd round
Selection of patient candidate for transition The pediatric health care team should...		
Define an individualized transition plan for each adolescent patient before initiating the transition process	92 ^b	-
Identify the adolescent candidate before starting the transition	90 ^b	-
Patient empowerment The pediatric health care team should...		
Educate adolescent patients so that they can detect exacerbations adequately	98 ^b	-
Educate adolescent patients so that they have a deep knowledge of prescribed treatments and show adequate use of them	97 ^b	-
Adapt the treatment schedule to facilitate adherence during the preparation stage and the overall transition process	95 ^b	-
Educate the adolescent patient on healthy activities and on prevention of those activities that could impact disease management	94 ^b	-
Adopt a communication style oriented to the characteristics of the adolescent patient	94 ^b	-
Educate the adolescent patient to acquire appropriate knowledge of severe asthma	93 ^b	-
Verify that the adolescent patient can manage severe asthma autonomously	91 ^b	-
Encourage the adolescent patient to become the main interlocutor with the health care team	90 ^b	-
Have written information about severe asthma and the transition process for the patient	89 ^b	-
Verify that the adolescent patient can describe the characteristics of their disease adequately	85 ^b	-
Understand that the transition process is a part of the patient's personal growth	85 ^b	-
Schedule follow-up visits with the patient in the absence of parents/guardians to assess their readiness level for the transition to adult care	65 ^c	45 ^c
Information and education resources for parents/guardians The pediatric health care team should...		
Identify factors within the adolescent patient's home environment that may challenge the transition process	94 ^b	-
Inform the patient and parents/guardians about how the transition process will occur	92 ^b	-
Prepare parents/guardians to start gradually assuming a secondary role, assigning increasing responsibility to the patient for disease self-management	88 ^b	-
Interaction with adult care specialists (Pediatric/Adult) Health care teams should...		
(Adult) Be severe asthma specialists with expertise in personalized treatments	97 ^b	-
(Adult) Be able to manage the complexity of the adolescent patient all the way through this life-changing period	95 ^b	-
(Pediatric) Develop a line of communication with the allergist/pulmonologist that will treat the adolescent patient in the future before transferring the patient to adult care	94 ^b	-
(Adult) Have specific training in management of adolescent patients	90 ^b	-
(Pediatric and adult) Ensure that the patient and their parents/guardians meet the adult care team that will manage the patient in the future	88 ^b	-
(Pediatric) Inform the adult specialist team that the patient has started the process of transition to adult care	85 ^b	-
Information to be transmitted to adult care specialists The pediatric health care team should...		
...Share detailed information regarding patient's medical history with adult care specialists	99 ^b	-

^aOnly items with no consensus in the first round were voted in the second round. The results of both rounds are shown for those items not reaching consensus in the first round.

^bItems with agreement consensus.

^cItems with no consensus in the first/second round.

to attend health care visits on their own was the only item for which consensus was not reached (Table 2, Supplementary Table 1).

Transition Process

Preparation

The expert panel agreed that the pediatric specialist should identify candidates for transition and develop an individualized transition plan for them (90% and 92%, respectively) (Table 3, Supplementary Table 2).

Consensus was reached for 11 out of 12 items related to patient empowerment (98%-85% agreement). Pediatric specialists should educate the patient on disease management, detection of exacerbations, adherence, and healthy lifestyle habits. In addition, communication should be adapted to the characteristics of adolescent patients, urging them to become the leading contact at follow-up visits and helping patients to accurately describe disease-related symptoms. However, no consensus was reached for the item proposing attendance at pediatric specialist visits on their own (Table 3, Supplementary Table 2).

Consensus was reached for all items related to education of parents/guardians during the preparation stage (94%-88% agreement). Pediatric specialists should identify factors

associated with the home environment that might impact the transition and inform parents/guardians about their secondary role at this stage (Table 3, Supplementary Table 2).

Agreement was reached for all items describing communication with adult specialists at this stage (99%-85%). Pediatric specialists should establish contact with adult specialists before the transfer event and share patients' clinical details. Adult specialists should have specific training to manage adolescent patients (90%), should be experts in severe asthma, and have experience in the prescription of personalized treatments (97%) (Table 3, Supplementary Table 2).

Effective Transfer

The expert panel achieved consensus on the importance of patients not undergoing a change of treatment before the transfer, but not on waiting until the patient reaches a stable phase of the disease before initiating the transfer (Table 4, Supplementary Table 3).

Pediatric and adult specialists should share updated clinical information before the transition (97% agreement) and have an on-site joint visit with the patient before the effective transfer to adult care (71% of agreement). After the joint visit, pediatric and adult specialists should agree on the criteria for maintaining

Table 4. Transition Planning.

Item	% of agreement ^a	
	1 st round	2 nd round
Patient status		
The pediatric health care team should...		
Verify that the patient is not undergoing changes in pharmacological treatments	70 ^b	-
Wait for the patient to reach a stable phase of severe asthma symptoms before initiating the transfer to adult care	57 ^c	51 ^c
Transition visit		
Both health care teams (pediatric and adult) should...		
Share updated patient clinical information before the transition visit with the patient takes place	97 ^b	-
Agree on the criteria for maintaining biological therapy after the joint visit (if the patient is receiving biological treatment)	85 ^b	-
Have an on-site joint visit with the patient before the transfer to adult care	71 ^b	-
Verify, after the joint visit, that the parents/guardians adopt a secondary role	67 ^c	61 ^c
Ensure a joint online visit (telephone or videoconference) with the patient before the transfer to adult care, when an on-site visit is not possible	60 ^c	52 ^c
Carry out the joint visit with the patient at the pediatric care premises	45 ^c	40 ^c
Carry out the joint visit with the patient at the adult care premises	29 ^c	14 ^c
Biological treatment (when the patient is transferred to a different hospital)		
The health care team should...		
(Pediatric) Inform the hospital pharmacy department about the patient's transfer to adult care in a different hospital and remove the patient from the biological dispensation registry	91 ^b	-
(Adult) Inform the hospital pharmacy department about a patient being transferred from pediatric care from a different hospital and enroll the patient on the biological dispensation registry	91 ^b	-

^aOnly items with no consensus in the first round were voted in the second round. The results of both rounds are shown for those items not reaching consensus in the first round.

^bItems with agreement consensus.

^cItems with no consensus in the first/second round.

the prescribed biological therapy (85% agreement) and update hospital pharmacy records to guarantee continuity of biological therapy when the patient is transferred to a different hospital (91% agreement). However, no consensus was reached on the department in which the joint visit should be held, the possibility of running a joint online visit when the on-site visit is not possible, or relegating parents/guardians to a secondary role (Table 4, Supplementary Table 3).

The scientific committee developed a transfer checklist document defining a minimum set of clinical details to be shared between specialists at this stage, including current and previous treatments, adherence, asthma control, lung function parameters, inflammatory biomarker levels, and comorbidities (Supplementary Figure 2).

Follow-up

Adult specialists should focus on educating patients about their disease during follow-up. The panelists also reached agreement on topics such as monitoring adherence, inhaler technique, and attendance at scheduled follow-up visits (99%-88% agreement). Consensus was not reached in topics such as assessing patient and parents/guardians' satisfaction with the overall transition process or offering parents/guardians the possibility of not being present at follow-up visits (Table 5, Supplementary Table 4).

None of the 4 items related to the role of pediatric specialists during the follow-up stage reached agreement (31%-64% agreement) (Table 5, Supplementary Table 4).

Duration of the Transition Process and Panelists' Reflections on the Implementation of the Transition Process

On average, panelists considered that the transition process should last 8.5 months. Across different specialties, pediatric pulmonologists/allergists indicated an average length of time of 10 months, whereas the average length of time indicated by allergists and pulmonologists was 5.9 and 8.1 months, respectively (Figure 1).

The main barriers that could challenge the implementation of the transition process described by panelists (question III) were lack of resources (time, staff) and dedicated infrastructures, particularly for organizing a joint visit. Other factors were suboptimal communication between pediatric and adult specialists and lack of training in managing adolescent patients. Regarding the applicability of the process, the most common point raised by the panelists was the need for support in the implementation of a transition protocol by national and regional health authorities, hospital management boards, and department heads.

Discussion

The need for a structured and coordinated transition process in pediatric patients with chronic diseases is widely accepted by clinicians around the world [10-12]. EAACI recently published a guideline for the transition of adolescents with

Table 5. Transition Process: Follow-up Stage.

Item	% of agreement ^a	
	1 st round	2 nd round
The (adult/pediatric) health care team should...		
(Adult) Monitor patient's adherence immediately after the transfer	99 ^b	-
(Adult) Verify correct inhaler technique immediately after the transfer	99 ^b	-
(Adult) Explain to the patient what information regarding severe asthma should be monitored between visits (eg, inhaler technique, adherence to treatment, rescue medication use, symptoms, number of exacerbations)	96 ^b	-
(Adult) Closely monitor the patient to detect any clinical change in severe asthma immediately after the transfer	92 ^b	-
(Adult) Monitor patient's attendance at follow-up visits during the first 12 months after the transfer	88 ^b	-
(Adult) Collect patients' and parents/guardians' overall satisfaction with the transition process	69 ^c	64 ^c
(Pediatric) Offer a "rescue visit" in pediatric care when the transition has been incomplete or unsuccessful	67 ^c	64 ^c
(Pediatric) Offer the patient the possibility of contacting the pediatric specialist for severe asthma-related concerns	66 ^c	59 ^c
(Pediatric) Call the patient who has transitioned to verify that the process has been adequately performed	37 ^c	31 ^c
(Adult) Schedule follow-up visits for the 12 months after the first visit of the patient to adult care	34 ^c	22 ^c
(Adult) Notify parents/guardians about the patient becoming accountable for severe asthma self-management and that they should adopt a secondary role, without having to be present at follow-up visits	49 ^c	22 ^c
(Pediatric) Offer an on-site follow-up visit at pediatric care to verify that the transition has been carried out correctly	30 ^c	21 ^c

^aOnly those items with no consensus in the first round were voted in the second round. The results of both rounds are shown for those items not reaching consensus in the first round.

^bItems with agreement consensus.

^cItems with no consensus in the first/second round.

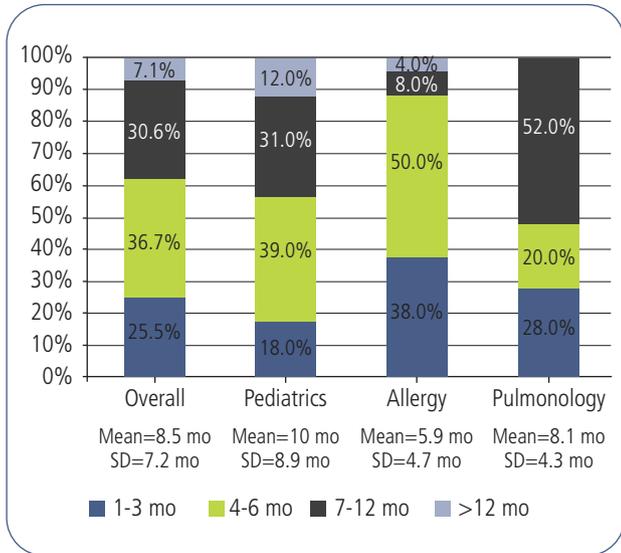


Figure 1. Duration of the transition process according to the expert panel. Stacked bars show the proportion of experts who rated each transition length range in the overall population and grouped by specialty (overall, n=98; pediatrics, n=49; allergy, n=24; and pulmonology, n=25).

asthma and other allergic conditions [9]. However, to the best of our knowledge, this is the first multidisciplinary consensus focused on the transition of adolescents with SA. The relevance of the present document is reflected by the fact that 86.7% of experts reported the lack of a transition protocol to adult care for pediatric SA patients at their hospitals. Figure 2 displays the recommendations for a structured SA transition process derived from the panelists' Delphi results.

Correct timing and preparation are key elements during transition planning [10]. However, panelists did not agree on an age range for initiation of transition. This lack of consensus might reflect factors such as the heterogeneity of clinical practice (which is conditioned by patient psychological maturity), patient/guardian willingness, individual health care provider criteria, and regulations for specific centers/regions. The EAACI guideline for the transition in patients with allergy and asthma recommends considering preparation for transition from early adolescence (11-13 years) [9]. In our study, the experts considered that the transition process should last, on average, 8.5 months, whereas the EAACI guideline did not stipulate a duration for transition.

The main goal to achieve during the transition process is that patients gradually acquire skills and responsibility for

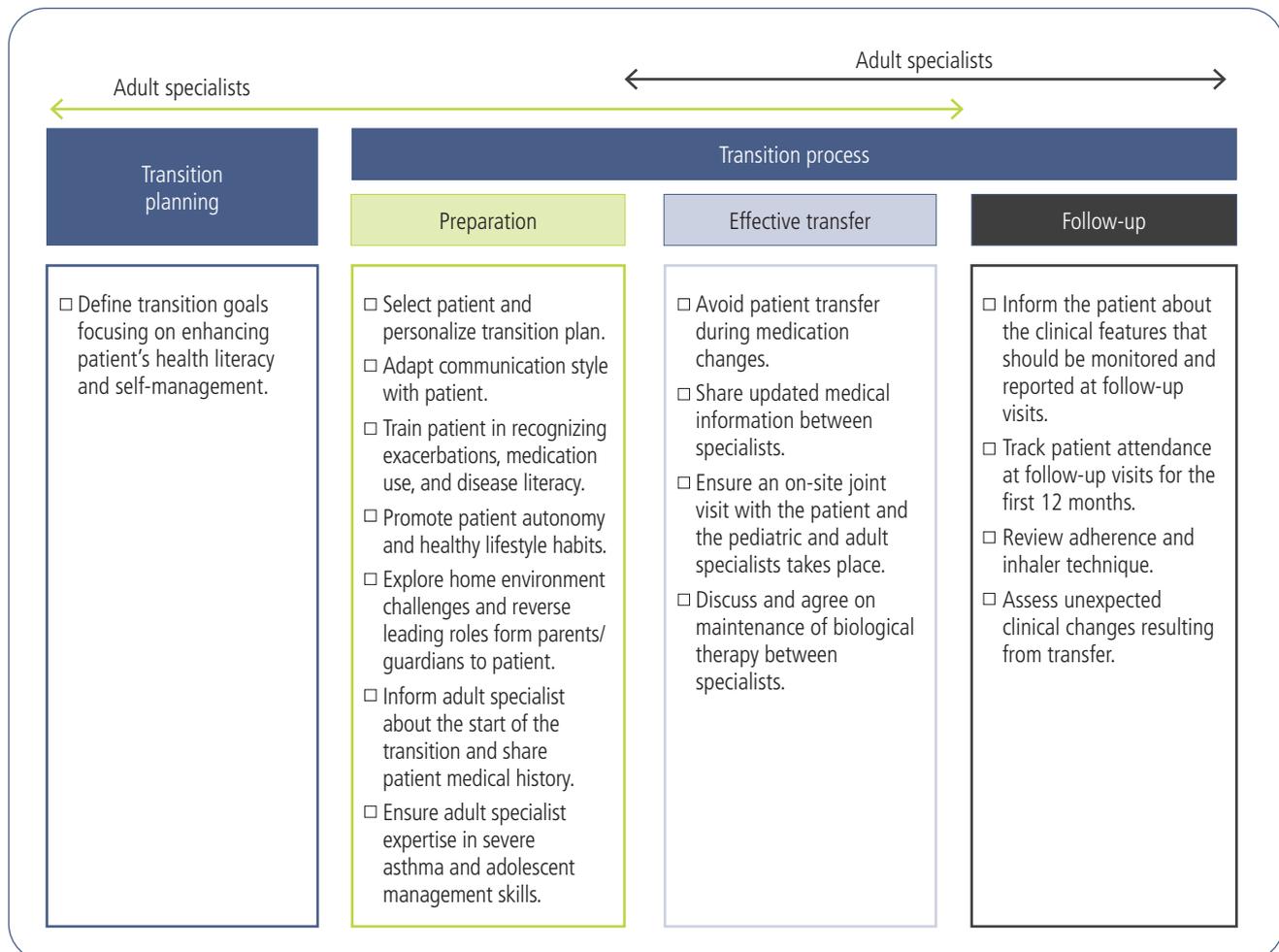


Figure 2. Severe asthma transition recommendations.

management of their SA and prescribed treatments, including at-home administration of biological therapy. Key roles of the pediatric specialists included training the patient to detect exacerbations, promoting patient disease literacy, and educating patients on healthy lifestyle habits. To this end, the language used by the specialist to communicate with the adolescent patient should be developmentally appropriate and understandable [23,24]. Guidelines on the transition of adolescents with chronic conditions recommend educational interventions to empower adolescents with self-management skills [9,12,23].

No consensus was reached on the presence of parents/guardians at medical appointments. Although adolescents are recommended to gradually attend appointments on their own [7,20,25], family can also provide valuable input with respect to factors affecting the patient. The UK guideline on the transition of adolescents with chronic digestive diseases supports promoting patient autonomy while considering parent/guardian perspectives [12]. Clinicians should inform the family about the details of the transition process and help them to gradually assume a secondary role. They should also look for factors in the patient environment that may challenge the transition. The importance of recognizing an adverse home environment has previously been acknowledged [9,26], since socioeconomic issues and stressful life events may impact disease control and quality of life [27]. Achieving disease stability was not considered a significant determinant for initiation of the transition, probably because this is complex and challenging to achieve for some patients.

Coordination and shared responsibility between pediatric and adult specialists are key to ensuring the continuity of medical care [9,10]. Adult specialists responsible for the transition should be experts in SA and biological treatments and trained in the management of adolescents. Specific roles of pediatric teams before the effective transfer included helping patients and parents/guardians familiarize themselves with adult specialists and contacting the adult team in advance to share patient clinical information with them. Some guidelines even suggest a period of overlap between visits to both services to enable a coordinated transition process [9,12]. Panelists also considered it essential to have an on-site joint visit with the patient, although they did not agree on the department at which this visit should occur. No agreement was reached on the possibility of a joint online visit. In this context, combined appointments with input from both departments are helpful when familiarizing the transitioning adolescent with the new team [7,9,12,28]. The lack of resources could have directly impacted the absence of agreement on some of these items. In fact, the most common barriers to the implementation of the transition described by panelists were time restraints, limited availability of technology and software, very long waiting lists, and factors impacting engagement between specialists. Health care managerial roles should also endorse the development of a transition protocol. Not only will this foster communication and coordination between pediatric and adult specialists, but it will also enable the allocation of necessary health resources.

Since a common concern in patients with chronic diseases is being lost to follow-up after transfer to adult care, this period deserves particular attention [7,20]. Important factors

found in this consensus are monitoring adherence, inhaler technique, and attendance at appointments during the first 12 months of follow-up in adult care. Assessment of adherence is particularly relevant, as the increasing independence of adolescents is frequently associated with poor adherence. No consensus was reached for feedback from adolescents and their parents/guardians on their experience at the end of the transition process, maybe because panelists might have considered that feedback should be requested not only at the end, but also during the transition process. In fact, guidelines in other chronic diseases suggest performing regular audits to identify potential areas for improvement [12,23].

During the development of the survey, the scientific committee called for the creation of a transfer checklist to facilitate engagement between pediatric and adult specialists. In fact, barriers mentioned by panelists that could challenge the implementation of the transition process were the lack of resources and infrastructure, areas which are particularly important at the transfer stage, where multidisciplinary management is required. To the best of our knowledge, the transfer checklist is the first document specifically developed for the transition of adolescent patients with severe asthma.

One methodological limitation of the study is that the recommendations are based on the clinical experience of a multidisciplinary panel of SA specialists rather than on published evidence. Therefore, the recommendations provided are not categorical assertions and should be adapted to specific clinical scenarios. The lack of published evidence reinforces the urgent need to develop clinical practice guidelines on the management of adolescents with SA and highlights the clinical value of the present document.

Conclusions

This is the first multidisciplinary consensus document to provide a framework for the transition of adolescents with SA to adult care. The recommendations emphasize the importance of developing an individualized and structured transition plan focused on enhancing patient health literacy and autonomy. Coordination between pediatric and adult specialists is key if we are to ensure that crucial aspects of the process are covered. The implementation of these recommendations will standardize the transition in health care organizations, guaranteeing a smooth and efficient process and minimizing the impact on the adolescent patient.

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Conflicts of Interest

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