

Specific Allergen Immunotherapy Use in 2012: An Irish Paediatric Surveillance Unit (IPSU) Study

Abstract:

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Abstract

Specific immunotherapy (SIT) is a disease modifying treatment for allergic rhinitis (AR), with its benefits most evident in those who are refractory to medical treatment. It is used less frequently in UK than Europe/US. No data exist on SIT use in Ireland. We audited paediatric practice to evaluate patient selection, SIT modalities and adverse events (A.E.). A 9 item questionnaire was sent to Irish paediatricians, identified via the Irish Paediatric Surveillance Unit (IPSU) mailing list. 58 children have undertaken SIT (Subcutaneous SCIT =3, Sublingual = 55). This represents 0.01% of Irish children estimated to have AR. 33 (56%) had asthma; 18 (55%) had perennial asthma, 7 (21%) seasonal asthma. Adverse events occurred in 5 cases (8.6%). Three treatments (3-5%) were discontinued as a result. SIT is available across Ireland, though only extremely small numbers of children with AR are being treated yet. Co-morbid asthma is frequent and does not increase adverse events. This audit will raise awareness of SIT use for AR in Ireland.

Introduction

Atopic conditions are common and many affected children have more than one of these conditions¹. Allergic rhinitis is often underappreciated in children and its typical symptoms of rhinorrhoea,^{2,3} sneezing, nasal congestion, and pruritus are often under-treated⁴. ARâ s secondary co-morbidities include a pervasive effect on sleep, mood and everyday activities, including both attendance and performance at school, with proven poorer state examination performance in children with allergic rhinitis⁵. Approximately 15% of UK children are affected by AR and our recent data suggest a similar prevalence in 6-9 year old children in Ireland⁶. Subcutaneous and sublingual allergen specific immunotherapy (SIT) is a modern, effective disease-modifying, rather than disease-controlling treatment that is well-established in Europe and elsewhere but not in Ireland or the UK. SIT has traditionally been offered mainly to patients who have not gained symptom control. However there is a move towards using SIT especially with the more patient friendly SLIT option to try to cure all levels of symptoms,⁵ as SLIT is potentially curative rather than merely symptom controlling⁵. A recent report from the UK⁶ estimated that only 1% of children with AR are on SIT. We sought to measure the rate of SIT use in Irish children with AR, using Irelandâ s national paediatric disease surveillance system, expecting the Irish rate to be even lower than in the UK.

Methods

The Irish Paediatric Surveillance Unit (IPSU) is a member of the International Network of Paediatric Surveillance Units (www.inopsu.com). It issues a monthly response card or email to Consultant Paediatricians in the Republic of Ireland and Northern Ireland identifying its active studies. According to IPSU protocol we initially placed an introductory letter in the IPSU newsletter one month before our study started, to raise awareness of this study. One month later IPSU sent a 9 item questionnaire to all paediatricians in Ireland, North and South. This mailing list identifies all paediatricians working in the public sector in Ireland. The sampling frame included all children treated in paediatric public sector services; no attempt was made to include patients who may have been treated in private or adult sector.

The questionnaire was based on that used in the UK by Vance et al⁶ with the authorsâ permission, modified to meet local needs. Data was collected via a postal and online survey over a two month time period in February and March 2012. The questionnaire included questions on indications for SIT, evidence of inhalant sensitization profile (i.e. skin test or serum allergen-specific IgE), modalities of SIT used, number of patients treated, presence of co-existing asthma and adverse events (AEs). The nature of A.E. experienced was recorded and any requirement for rescue medication use. In addition, the A.E. outcome was documented with respect to programme continuation (programme continued or completed); programme stopped (related or unrelated to A.E.). Exclusion criteria included consultant respondents whose patient cohorts would be unlikely to be offered SIT by that paediatrician (those practising exclusively in neonatology, neurology, cardiology etc.) We used the most recent census data to determine there were 1,262,122 children 16 years or younger in Ireland (Republic of Ireland and Northern Ireland) at the time of the survey. Statistical analyses were performed through calculation of descriptive parameters (percentage) for relevant variables.

Results

101 responses were received, giving a response rate of 36.3%. Responding paediatricians (n=35) without a general paediatric role (neonatology, cardiology, neurology etc.) were excluded as they would likely refer any possible SIT patients to a colleague. Geographic representation was achieved with SIT questionnaires returned from 14 centres nationwide (Figure 1), including all 6 university centres. Three academic centres accounted for 50% of cases. Data were supplied on fifty-eight children who had started SCIT (n = 3) or SLIT (n = 55). Five children had

completed treatment and the remainder were in ongoing therapy. Skin-prick testing and specific IgE were exclusively used as supportive indicators for commencing treatment, in those with a clinical diagnosis of AR. Product types are shown in Table 1. Currently approximately 14% of general paediatricians (n=9) are prescribing SIT, with a total of fifty-eight children receiving SIT, primarily sublingually. This represents less than 0.01% of potential cases of paediatric AR.

Reasons for not prescribing SIT included the clinician's view that their AR patient's symptoms were well controlled on medical treatment, or they felt it to be a specialist treatment or that the child was referred to another paediatrician with an interest in this area. SLIT route predominates with SCIT used in only 3 cases (Wasp=2, both tree pollen and house dust mite=1) and SLIT in 55 cases. 56% of patients have asthma, primarily perennial asthma (53%). Adverse events were reported in less than 10% of cases and no adverse event was major, (n=5: Local A.E. = 3, Systemic A.E. =2). No reported A.E required use of adrenaline/epinephrine. Timing of A.E. where documented occurred early in treatment course (n=3). Three patients have been withdrawn, two due to systemic adverse event and 1 due to local adverse event, 2 of these were due to parental withdrawal, 1 medical.

Discussion

This is the first national audit of SIT use in Ireland. Our data suggests 15% of Irish children have AR¹. International estimates of the number of children with AR who could be offered SIT is extrapolated from adult studies showing that of the 27% of patients on maximal therapy, 15% remained symptomatic and thus potentially treatable with SIT^{6,7}. However SIT is not exclusively reserved for those cases who fail maximal medical therapy, so even using these published data would be a conservative estimate. Applying this conservative estimate to Irish census data for Republic of Ireland and Northern Ireland data for children under the age of 14 years, this study has shown an extremely low rate of SIT use, with only 0.01% of potential patients on SIT.

Currently SIT is the only treatment that improves the long-term natural history of AR, with reduction in symptoms and medication use. SIT is safe and efficacious but its current use rate in Ireland is extremely low. Regional variation in the use of SIT was observed, with larger patient cohorts in units with paediatricians specialising in this area (allergy/immunology and respiratory medicine). This suggests referral bias, with patients referred to such centres (as was highlighted in survey responses). However the extreme scarcity of trained allergy specialists is probably limiting potential use of this treatment. Therefore it is somewhat encouraging that SIT use is not completely confined to specialist services only. Co-morbid asthma is frequent without increasing adverse events despite international guidelines suggesting this population should be excluded from SIT. This is consistent with UK findings⁶, which suggest practising, allergy-experienced paediatricians are using SIT in patients in ways that current guidelines do not support but who may have even more to gain from SIT, relating to asthma control in addition to AR control³.

There are some limitations to this survey that we must acknowledge. This audit focuses on public practice only. There is an appreciation that many private practices or adult centers may be treating some children with AR, but they are not staffed by members of IPSU. Voluntary participation in IPSU surveys could be a limiting factor (the response rate was only 36%) but all the biggest units responded and it was stated in many replies that children were referred to other centers for consideration of SLIT. Therefore we believe that we have probably identified the majority of children receiving this locally novel modality of treatment in the public sector in Ireland. It appears Irish allergy specialists and general paediatricians are willing to use SIT but a lot of suitable patients are not yet being offered SIT. In conclusion, SIT is being used safely in the paediatric population in Ireland at present and is not confined to specialist services. However its impact/penetration so far is extremely low. There probably exists a very large cohort of Irish AR patients who are not receiving appropriate treatment. While they may have symptom control with pharmacotherapy, they are not being offered disease-altering treatments. We hope this audit raises awareness of SIT use for allergic rhinitis and other allergic disorders in Ireland.

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Conflict of Interest

JO'BH has received speaker fees and academic travel cost support from ALK Abello and Stallergens, who make immunotherapy products.

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