

ABSTRACT

Rationale: Although premature discontinuation of allergy immunotherapy (PDIT) is common, little is known about patient- and system-related characteristics associated with likelihood for PDIT.

Methods: We conducted a six-year (6/6/2002 to 6/30/2008) retrospective analysis of computerized claims from 2 clinic sites within a large, single-specialty, allergy practice to examine characteristics associated with likelihood of PDIT (>3 month gap between IT administrations within 2 years of initiation). Characteristics included patient sex, age at IT initiation, and insurance (commercial, Medicaid, Medicare, other). Analyses were conducted combined and separately for children (<18 years) and adults (≥18 yrs).

Results: We identified 1,927 patients (840 children and 1,087 adults) who received ≥ 1 IT administration and had ≥ 2 years of claims data following IT initiation. Females accounted for 37% of children and 69% of adults.

Rates of PDIT were 41% for children and 36% for adults. Compared to commercially-insured children, those on Medicaid were 2.4 times more likely to prematurely discontinue IT (p<0.0001); sex, age at IT initiation, and clinic site did not significantly predict childhood PDIT. Compared to adult males, adult females were 1.4 times more likely to prematurely discontinue IT; younger adults (aged 18-29) were 2.4 times more likely to prematurely discontinue IT than those ≥ 50 years. Compared to commercially-insured adults, those using "other" (e.g., VA, Champus) coverage were 59% less likely to prematurely discontinue IT.

Conclusions: Interventions to reduce PDIT should reflect the substantial child versus adult variation in characteristics associated with PDIT likelihood.

BACKGROUND AND OBJECTIVES

Allergies are the sixth leading cause of chronic disease in the United States (U.S.), and are estimated to cost the U.S. health care system \$18 billion annually.¹ Despite growing evidence that allergy immunotherapy (IT) is the only treatment that can modify the allergic disease process (by preventing asthma and the development of new allergies),² little is currently known about how this treatment is being used.

To identify patterns of IT care occurring in "real world" practice settings (as opposed to clinical trials or highly select practice settings), we conducted analyses of retrospective claims data from patients receiving care during 2002-2008 in two U.S. allergy specialist outpatient clinics to determine rates of premature discontinuation and variation in IT use based on patient characteristics.

DESCRIPTION OF ALLERGY PARTNERS, P.A.

Allergy Partners, P.A., is the nation's largest single-specialty practice specializing in allergy, asthma, and immunology. Allergy Partners consists of 22 offices and 29 satellite locations in 11 states staffed by 53 allergy, asthma, and sinus specialists. The mission of Allergy Partners is to be the leader in the development and delivery of high-quality health care for patients with asthma and allergic disease. In service of our mission, we conducted this research to examine and continuously improve quality and access of care.

METHODS

We conducted a six-year (6/6/2002 to 6/30/2008) retrospective analysis of computerized claims from two clinic sites within a large allergy practice to examine factors associated with the likelihood of premature discontinuation of IT (PDIT), defined as a > 3-month gap between IT administrations within 2 years of IT initiation. Independent variables included patient sex, age at allergy testing and insurance status. Analyses were conducted separately for children (<18 years) and adults (≥ 18 years). Information was patient de-identified and fully compliant with the HIPAA Privacy Rule.

Poster L18

Characteristics Associated with Premature Discontinuation of Allergen Immunotherapy among Children and Adults:

Findings from a Large, Single-Specialty Allergy Practice in the United States

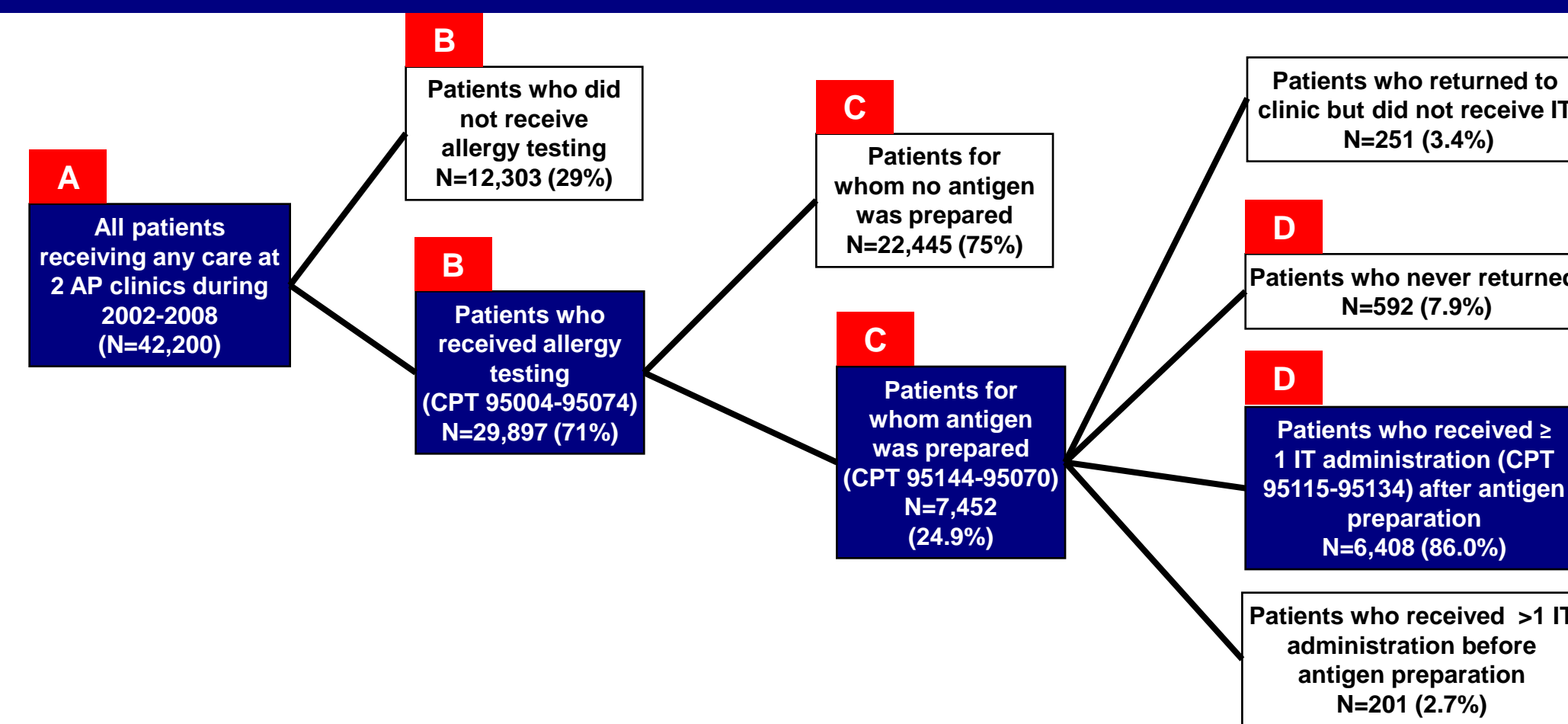
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PRESENTED AT THE 2009 AAAAI ANNUAL MEETING
Washington, D.C.
March 13-19, 2009

RESULTS

SAMPLE IDENTIFICATION



DEMOGRAPHICS

Patient Characteristics	N (42,200)	%
Female	24,098	57.1%
Adult (≥ 18 years)	22,035	52.2%
Commercial Insurance	33,408	79.2%

- We identified 42,200 patients who had a claim for services during the 6-year study period.
- The majority of patients were:
 - Female
 - Adult (average age 26.1 yrs)
 - Privately insured.

Patient Characteristics	Mean	SD
Age at first visit (years)	26.1	21.8

FACTORS ASSOCIATED WITH RECEIVING ALLERGY TESTING

Characteristic	Received Allergy Test (N=29,897)	Did Not Receive Allergy Test (N=12,303)	p-value
Female, N (%)	16,896 (56.5%)	7,202 (58.5%)	0.0001
Adult, N (%)	14,424 (48.2%)	7,611 (61.9%)	<0.0001
Age (yrs), Mean (SD)	24.3 (21.6)	30.7 (21.8)	<0.0001
Insurance, N (%)	23,698 (79.3%)	9,710 (78.9%)	NS

Males, younger children, and older adults were significantly less likely to receive allergy testing compared to females, older children, and younger adults, respectively.

FACTORS ASSOCIATED WITH RECEIVING ALLERGEN PREPARATION

Factors Associated with Antigen Preparation

Characteristic	Antigen Prepared (N=7,452)	Antigen Not Prepared (N=22,445)	p-value
Female, N (%)	4,272 (57.3%)	12,243 (56.0%)	<0.05
Adult, N (%)	4,215 (56.6%)	9,796 (44.8%)	<0.0001
Age (yrs), Mean (SD)	26.6 (18.4)	23.1 (22.4)	<0.0001
Insurance, N (%)	5,980 (80.2%)	17,242 (78.9%)	0.01

Males, older children, younger adults, and those with non-commercial insurance were significantly more likely to have an antigen prepared following allergy testing compared to females, younger children, older adults, and those with commercial insurance, respectively.

FACTORS ASSOCIATED WITH RECEIVING ALLERGY IMMUNOTHERAPY

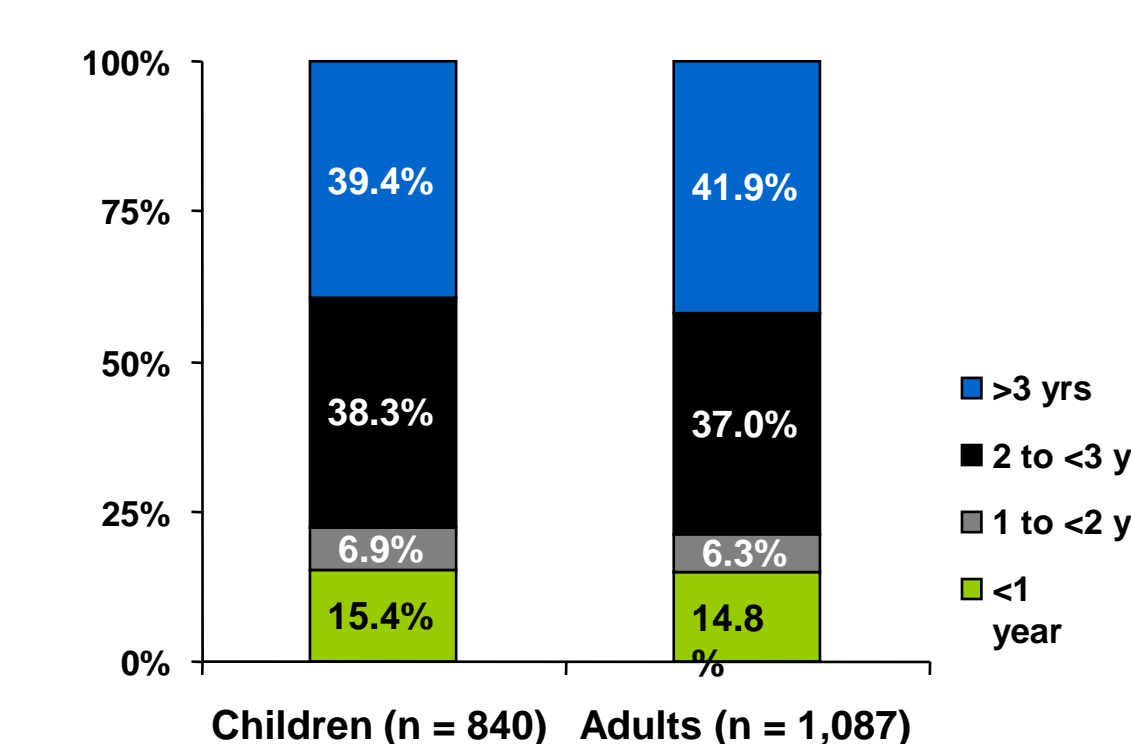
Factors Associated with Receiving Allergy Immunotherapy

Characteristic	Received Allergy Immunotherapy (N=6,408)	Antigen Prepared But IT Not Received (N=592)	p-value
Female, N (%)	3,683 (57.5%)	318 (53.7%)	0.08
Adult, N (%)	3,637 (56.8%)	311 (52.5%)	0.046
Age (yrs), Mean (SD)	26.8 (18.6)	23.7 (15.7)	<0.0001
Insurance, N (%)	5,199 (81.1%)	433 (73.1%)	<0.0001

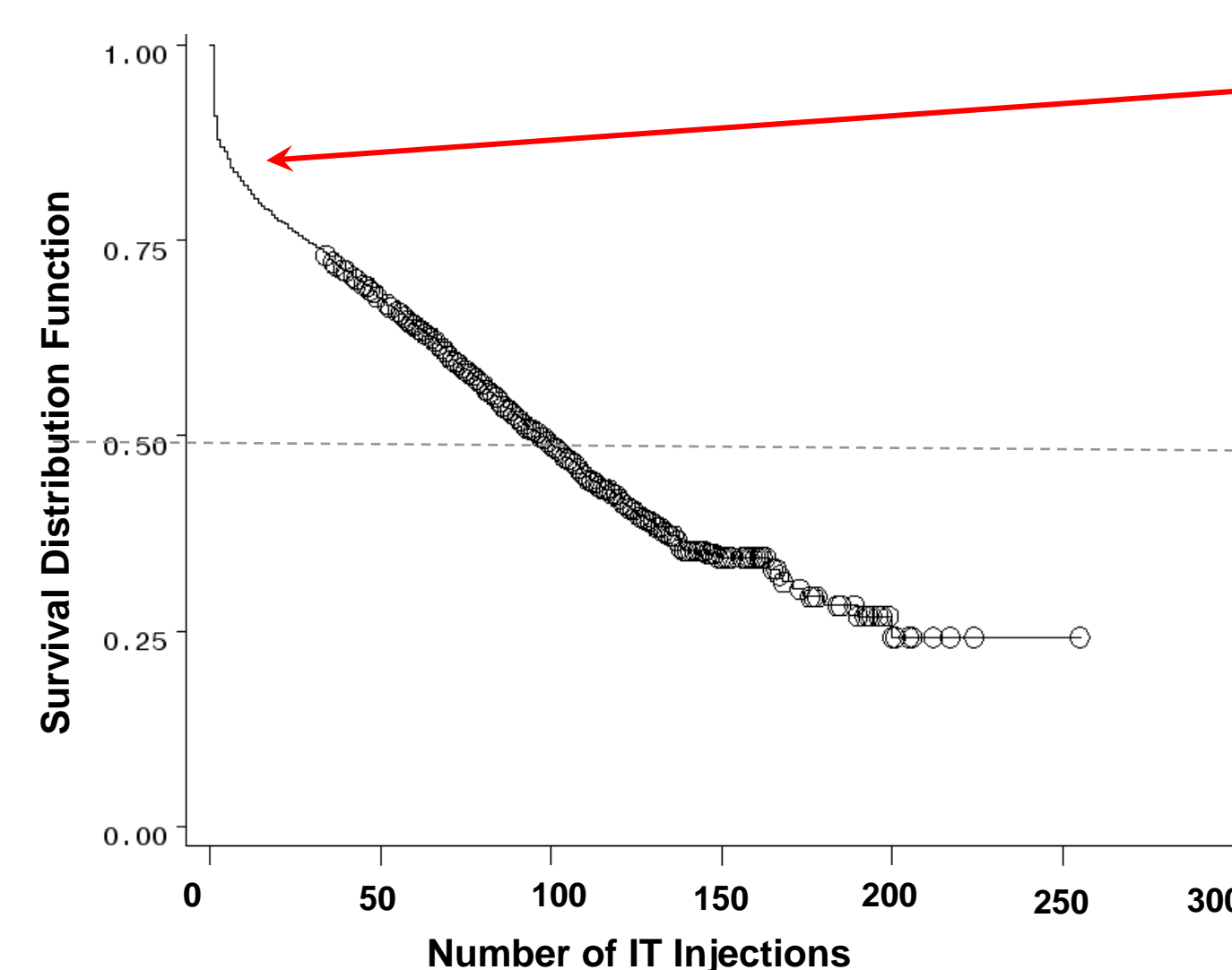
Following antigen preparation, younger children, older adults and those with commercial insurance were significantly more likely to receive IT compared to older children, younger adults and those with non-commercial insurance.

7.9% of patients for whom antigen was prepared did not return for subsequent IT.

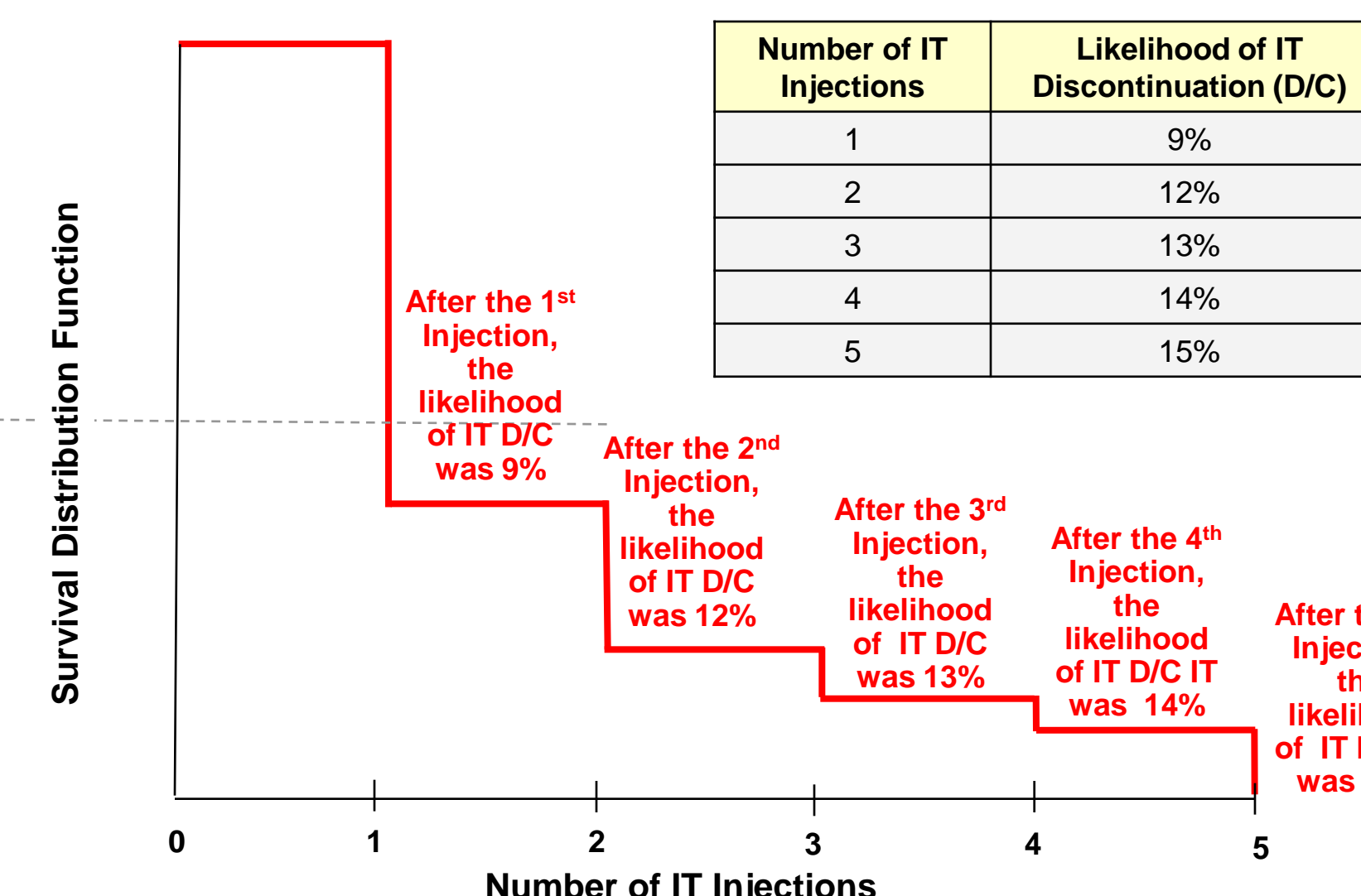
DURATION OF TREATMENT



TIME TO TREATMENT DISCONTINUATION



There was a very steep decline in the likelihood of IT continuation (i.e., a heightened likelihood of discontinuation) at the start of therapy (injections 1-5). After approximately 5 IT administrations, the likelihood of decline (discontinuation) slowed.



CONCLUSIONS

Only 41% of IT initiators completed at least 3 years of IT. There was a high (15%) likelihood of IT discontinuation within the first 5 IT administrations. Discontinuation rates reported in our study are disheartening, given compelling evidence that IT is an effective and safe disease-modifying treatment,⁴ and given the substantial clinical and economic burden of allergic disease.¹ Rates reported by us are consistent with previously published research.⁵⁻¹⁰

Premature IT discontinuation was significantly more likely among females, those with non-commercial versus commercial insurance, and persons age 0-5 years, age 6-20 years, and age 21-50 years compared to those age ≥ 50 years. Other studies examining predictors of IT discontinuation also report that older patients and those with commercial insurance are less likely to prematurely discontinue IT.^{5,6}

Our findings are limited by the nature of claims data; we therefore cannot provide information about the number of patients who had negative or positive allergy tests, were offered but refused IT, or had contraindications that precluded IT. Future studies should seek to collect data from multiple sources to determine the contributions of patient, physician, and institutional factors on quality of care so that effective interventions can be appropriately targeted.

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DISCLOSURES:
Funding for this research was provided by Greer Laboratories.

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