

Supplementary Online Content

Salö M, Gudjonsdottir J, Omling E, Hagander L, Stenström P. Association of IgE-mediated allergy with risk of complicated appendicitis in a pediatric population. *JAMA Pediatr*. Published online August 6, 2018. doi:10.1001/jamapediatrics.2018.1634

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This supplementary material has been provided by the authors to give readers additional information about their work.

eFigure 1. Adjusting for Sex in Multivariable Regression Model

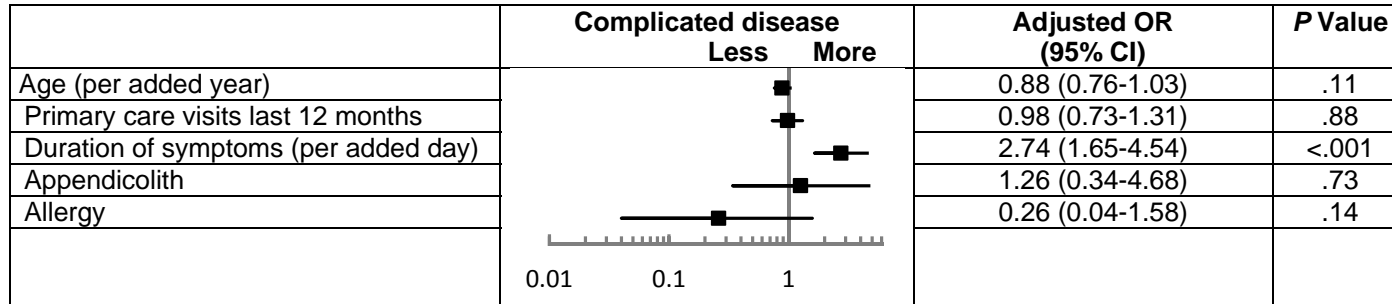
	Complicated disease Less More	Adjusted OR (95% CI)	P Value
Age (per year)		0.83 (0.79-0.89)	<.001
Male		0.89 (0.60-1.33)	.57
Duration of symptoms (per day)		2.51 (2.05-3.07)	<.001
Appendicolith		1.84 (1.07-3.16)	.03
Allergy		0.33 (0.18-0.59)	<.001
Pollen allergy ^a		0.29 (0.12-0.70)	.006
Fur or mite allergy ^b		0.25 (0.07-0.94)	.04
Egg or milk protein allergy ^c		0.60 (0.16-2.29)	.45
Antibiotic allergy ^d		0.60 (0.21-1.71)	.34

Sex included in the multivariable regression model: Adjusted odds ratios and confidence intervals for complicated disease among 605 children operated for acute appendicitis.

^a Pollen allergy versus no allergy. Pollen allergy includes allergies to allergens with cross-reactivity to pollen, ^b Fur or mite allergy versus no allergy,

^c Egg or milk protein allergy versus no allergy, ^d Antibiotic allergy versus no allergy.

eFigure 2. Adjusting for Primary Care Visits in Multivariable Regression Model



Number of primary care visits included in the multivariable regression model (N=95): Adjusted odds ratios and confidence intervals for complicated disease among 95 children operated on for acute appendicitis for whom data regarding primary care visits last 12 months were available.

eFigure 3. Univariate Odds Ratios

A. PAD-verified diagnosis (n=340): Univariate odds ratios and confidence intervals for complicated disease among 340 children operated on for acute appendicitis for whom PAD-verified diagnosis was available

	Uncomplicated (n=210)	Complicated (n=130)	Complicated disease Less More	OR (95% CI)	P Value	
Gender						
Boys ^a	144 (68.6% [61.8-74.8%])	74 (56.9% [48.0-65.6%])			0.61 (0.38-0.95)	.03
Girls ^a	66 (31.4% [25.2-38.2%])	56 (43.1% [34.4-52.0%])				
Age (year) ^b	11 [9-13]	8 [4-11]			0.79 (0.74-0.85)	<.001
Duration of symptoms (days) ^b	1 [<1-1]	2 [1-3]			2.59 (2.04-3.30)	<.001
Appendicolith ^a	20 (9.5% [5.9-14.3%])	34 (26.2% [18.8-34.6%])			3.36 (1.84-6.16)	<.001
Primary care visits last 12 months ^{b,c}	0 [0-1]	1 [0-3]			1.25 (0.96-1.63)	.10
Allergy ^a	49 (23.3% [17.8-29.6%])	7 (5.4% [2.2-10.8%])			0.19 (0.08-0.43)	<.001
Pollen allergy ^a	28 (13.3% [9.0-18.7%])	3 (2.3% [0.5-6.7%])			0.14 (0.04-0.47)	.002
Fur or mite allergy ^a	13 (6.2% [3.3-10.4%])	1 (0.8% [0.0-4.2%])			0.10 (0.01-0.78)	.03
Egg or milk protein allergy ^a	5 (2.4% [0.8-5.5%])	1 (0.8% [0.0-4.2%])			0.26 (0.03-2.27)	.22
Antibiotic allergy ^a	7 (3.3% [1.4-6.7%])	3 (2.3% [0.5-6.7%])			0.56 (0.14-2.21)	.41

^a n (% [95% confidence interval]), ^b median [interquartile range], ^c Data available on 95 patients (available from 2015-2016).

B. Clinical diagnosis only (n=264): Univariate odds ratios and confidence intervals for complicated disease among 264 children operated on for acute appendicitis for whom only clinical diagnosis was available

	Uncomplicated (n=138)	Complicated (n=126)	Complicated disease Less More	OR (95% CI)	P Value
Gender					
Boys ^a	86 (62.3% [53.7-70.4%])	76 (60.3% [51.2-68.9%])		0.92 (0.56-1.51)	.74
Girls ^a	52 (37.7% [29.6-46.3%])	50 (39.7% [31.1-48.8%])		0.82 (0.76-0.89)	<.001
Age (year) ^b	11 [8-12]	9 [4-11]		2.98 (2.16-4.10)	<.001
Duration of symptoms (days) ^b	1 [<1-1]	1 [1-3]		2.77 (1.39-5.51)	.004
Appendicolith ^a	14 (10.1% [5.7-16.4%])	30 (23.8% [16.7-32.2%])		1.53 (0.79-2.97)	.21
Primary care visits last 12 months ^{b, c}	0 [0-2]	1 [0-2]		0.37 (0.18-0.73)	.005
Allergy ^a	33 (23.9% [17.1-31.9%])	13 (10.3% [5.6-17.0%])		0.23 (0.08-0.72)	.01
Pollen allergy ^a	16 (11.6% [6.8-18.1%])	14 (3.2% [0.9-7.9%])		0.37 (0.07-1.96)	.24
Fur or mite allergy ^a	5 (3.6% [1.2-8.3%])	2 (1.6% [0.2-5.6%])		0.70 (0.15-3.19)	.64
Egg or milk protein allergy ^a	4 (2.9% [0.8-7.3%])	3 (2.4% [0.5-6.8%])		0.66 (0.20-2.16)	.50
Antibiotic allergy ^a	7 (5.1% [2.1-10.2%])	5 (4.0% [1.3-9.0%])			

^a n (% [95% confidence interval]), ^b median [interquartile range], ^c Data available on 95 patients (available from 2015-2016).

eFigure 4. Adjusted Odds Ratios

A. PAD-verified diagnosis (n=340): Adjusted odds ratios and confidence intervals for complicated disease among 340 children operated on for acute appendicitis for whom PAD-verified diagnosis was available

	Complicated disease		Adjusted OR (95% CI)	P Value
	Less	More		
Age (per added year)			0.84 (0.77-0.91)	<.001
Duration of symptoms (per added day)			2.39 (1.84-3.10)	<.001
Appendicolith			1.91 (0.94-3.88)	.07
Allergy			0.23 (0.09-0.56)	.001
Pollen allergy ^a			0.20 (0.06-0.73)	.02
Fur or mite allergy ^b			0.15 (0.02-1.26)	.08
Egg or milk protein allergy ^c			0.31 (0.03-3.11)	.32
Antibiotic allergy ^d			0.59 (0.41-2.55)	.51

^a Pollen allergy versus no allergy. Pollen allergy includes allergies to allergens with cross-reactivity to pollen. ^b Fur or mite allergy versus no allergy, ^c Egg or milk protein allergy versus no allergy, ^d Antibiotic allergy versus no allergy.

B. Clinical diagnosis only (n=264): Adjusted odds ratios and confidence intervals for complicated disease among children operated on for acute appendicitis for whom only clinical diagnosis was available

	Complicated disease Less More	Adjusted OR (95% CI)	P Value
Age (per added year)		0.84 (0.77-0.92)	<.001
Duration of symptoms (per added day)		2.83 (2.03-3.96)	<.001
Appendicolith		1.80 (0.78-4.16)	.17
Allergy		0.45 (0.20-1.02)	.06
Pollen allergy ^a		0.46 (0.14-1.57)	.22
Fur or mite allergy ^b		0.44 (0.07-2.77)	.38
Egg or milk protein allergy ^c		0.93 (0.16-5.37)	.94
Antibiotic allergy ^d		0.55 (0.13-2.29)	.41

^a Pollen allergy versus no allergy. Pollen allergy includes allergies to allergens with cross-reactivity to pollen, ^b Fur or mite allergy versus no allergy, ^c Egg or milk protein allergy versus no allergy, ^d Antibiotic allergy versus no allergy.

eMethods. Evaluation of Heterogeneity

1. Interaction between age and occurrence of allergy:

Test of heterogeneity for interaction between age at appendicitis and occurrence of allergy: $p=0.68$. There is no evidence of significant effect modification.

2. Interaction between occurrence of allergy and medication:

Test of heterogeneity for interaction between occurrence of allergy and medication for allergy: $p=0.22$. There is no evidence of significant effect modification.

3. Interaction between occurrence of seasonal allergy (pollen allergy) and season:

Test of heterogeneity for interaction between pollen allergy and time of year: $p=0.83$. There is no evidence of significant effect modification.