

Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.

### P155

# ASSOCIATION OF PRIOR COVID-19 INFECTION AND SYSTEMIC SIDE EFFECTS AFTER COVID-19 VACCINATION IN HEALTHCARE POPULATION

V. Phomakay\*, J. Lieberman, Memphis, TN

**Introduction:** There is limited information on risk factors associated with COVID-19 vaccination systemic side effects (SSE). Our study assesses if prior history of COVID-19 infection or close exposure is associated with SSE after COVID-19 vaccination.

**Methods:** A survey was emailed to study participants using institutional listservs. Questions included demographics, COVID-19 infection history, any known COVID-19 exposure in household or healthcare settings, side effects experienced after both doses of the COVID-19 vaccines, onset and duration of side effects, and reporting of adverse effects.

**Results:** 538 participants completed the survey. Of those, 520 (97%) participants received the Pfizer vaccine. 49 (9%) reported prior COVID-19 infection. 222 (41%) reported exposure to COVID-19 in household settings and/or healthcare settings. SSE after the first dose of the COVID-19 vaccine were seen in 43% (21/49) of participants with prior COVID-19 infection history vs 25% (121/487) of participants without history of COVID-19 infection (p-value < 0.05). There was no significant difference in SSE after the second dose of the vaccine between groups. There was no significant difference in SSE between participants reporting COVID-19 exposure vs no exposure. Of the secondary outcomes, age and workplace were not significantly associated with increased SSE. Females reported more systemic symptoms after the 2<sup>nd</sup> dose compared to males (p<0.05). Immediate type reactions were very rare (<1%) and precluded data analysis because of their scarcity in our study population.

**Conclusions:** Prior history of COVID-19 infection was associated with SSE after the 1<sup>st</sup> dose of the COVID-19 vaccine.

#### **Other-EOE**

### P157

# DYSPHAGIA DAYS AS A CLINICAL MARKER OF EOE TREATMENT RESPONSE

Check for updates

I. Hirano<sup>\*1</sup>, M. Rothenberg<sup>2</sup>, S. Zhang<sup>3</sup>, C. Rodriguez<sup>3</sup>, C. Charriez<sup>3</sup>, K. Coyne<sup>4</sup>, E. Dellon<sup>5</sup>, *1. Chicago, IL; 2. Cincinnati, OH; 3. Princeton, NJ; 4. Bethesda, MD; 5. Chapel Hill, NC* 

**Introduction:** In the HEROES study (Hirano I, et al. <u>Gastroenterology. 2019</u>:156:592-603), cendakimab provided histologic and endoscopic benefits in adults  $\leq$ 65 years with eosinophilic esophagitis (EoE) at week 16. Clinical dysphagia symptom improvement (via Daily Symptom Diary) was numerically better with cendakimab 360 mg versus placebo overall (*P*=0.073) and in steroid-refractory patients (*P*=0.054). This ad hoc analysis assessed dysphagia days (DD) as an alternative EoE clinical response measure.

**Methods:** Patients were randomized, stratified by steroidrefractory status to receive: cendakimab 5 mg/kg intravenous (IV) loading dose + 180 mg subcutaneously (SC) on day 1, then 180 mg SC weekly for 15 additional weeks; cendakimab 10 mg/kg IV loading dose + 360 mg SC on day 1, then 360 mg SC weekly for 15 weeks; or placebo (IV loading dose + SC) on day 1, then SC weekly for 15 weeks. Change in number of DD from baseline to week 16 for cendakimab versus placebo was examined using analysis of covariance. A "yes" response to: "During any meal today, did food go down slowly or get stuck in your throat or chest?" defined a DD.

**Results:** At week 16, least-squares mean (LSM) difference in DD was significant for cendakimab 360 mg versus placebo (P=0.0115) overall. In steroid-refractory patients, LSM difference in DD was significant for cendakimab 360 mg versus placebo (P=0.0079). In steroid non-refractory patients, no differences were observed.

**Conclusion:** The concept of DD is clinically relevant, easy to interpret, and may provide a sensitive and more responsive clinical endpoint for EoE research.

## P158

### HEALTHCARE RESOURCE UTILIZATION AND ECONOMIC BURDEN OF EOSINOPHILIC ESOPHAGITIS: A US-BASED RETROSPECTIVE MATCHED COHORT STUDY



D. Mullins<sup>\*1</sup>, J. Jiang<sup>2</sup>, L. Chen<sup>2</sup>, T. Fan<sup>2</sup>, B. Goodwin<sup>3</sup>, M. Lu<sup>2</sup>, S. Chen<sup>3</sup>, M. Boules<sup>2</sup>, *1. Baltimore, MD; 2. Lexington, MA; 3. Cambridge, MA* 

**Introduction:** We provide an overview of the healthcare resource utilization (HCRU) and economic burden of eosinophilic esophagitis (EoE) in the USA.

**Methods:** This retrospective, matched cohort study assessed data from two private healthcare claims databases: IBM MarketScan, and Medicare Supplemental and Coordination of Benefits. Patients with EoE and matched controls without EoE were identified between January 2008 and December 2019 (index year: 2009–2018). Data were stratified by age: children (0–11 years old); adolescents (12–17 years old); adults (18–54 years old); and older adults ( $\geq$ 55 years old). All-cause HCRU and direct healthcare costs were estimated during the study (12-month period after the first diagnosis of EoE [index date]).

HCRU,* n (%)	Patients with EoE					Matched controls without EoE					McNemar's X <sup>2</sup>	p value
	0-11 years old (n=3532)	12-17 years old (n=3036)	18-54 years old (n=19,053)	≥55 years old (n=3776)	Overall (n=29,397)	0-11 years old (n=3532)	12-17 years old (n=3036)	18-54 years old (n=19,053)	≥55 years old (n=3776)	Overall (n=29,397)	statistic <sup>6</sup>	
Diagnostic endoscopy	2909 (82.4)	2514 (82.8)	13,965 (73.3)	2734 (72.4)	22,122 (75.3)	15 (0.4)	13 (0.4)	357 (1.9)	113 (3.0)	498 (1.7)	5906.9	<0.000
Reason for ER visit												
Any	1046 (29.6)	954 (31,4)	4700 (24.7)	782 (20.7)	7482 (25.5)	550 (15.6)	457 (15.1)	2332 (12.2)	474 (12.6)	3,813 (13.0)	12,735.0	<0.000
Associated with	50	125	1073	158	1406	2	1	7	4	14	27,947.0	<0.000
Associated with	(1.4)	(4.1)	(5.6)	(9.2)	(4.0)	(0.1)	(40.1)	(\$0.1)	(0.1)	(\$0.1)		
esophageal stricture	12 (0.3)	61 (2.0)	832 (4.4)	138 (3.7)	1043 (3.5)	(0.0)	(0.0)	0(0.0)	2 (0.1)	2 (<0.1)	28,346.0	<0.000
Associated with food impaction	60 (1.7)	183 (6.0)	1502 (7.9)	211 (5.6)	1956 (6.7)	2 (0.1)	0(0.0)	3 (<0.1)	2 (0.1)	7 (<0.1)	27,418.0	<0.000
Associated with food alleroy	40	22	47	3 (0.1)	112	8 (0.2)	3 (0.1)	3	0	14	29,241.0	<0.000
Associated with GERD	92	76	709	141	1018	3	5	73	25	106	28,060.6	<0.000
Associated with asthma	170	142	365	53	730	66	43	106	19	234	27,970.6	<0.000
Associated with alleroic	(*.8)	(12	60	(1.4)	(2.5)	6	(1.4)	10	(0.5)	(0.8)		
rhinitis	(0.7)	(0.4)	(0.3)	(0.1)	(0.3)	(0.2)	(0.1)	(0.1)	(<0.1)	(0.1)	29,238.1	<0.000
Outpatient visit (any)	3530 (99.9)	3033 (99.9)	18,954 (99.5)	3768 (99.8)	29,285 (99.6)	3269 (92.6)	2653 (87.4)	15,684 (82.3)	3396 (89.9)	25,002 (85.0)	24,666.0	<0.000
More than or equal to 5	3289	2697	14,615	3298	23,899	1431	1186	8210	2329	13,156	1460.6	<0.000
outpatient visits (any)	(93.1)	(88.8)	(76.7)	(87.3)	(81.3)	(40.5)	(39.1)	(43.1)	(61.7)	(44.8)		
Gastroenterologist	(66.0)	(63.3)	(68.8)	(69.9)	(68.0)	(1.6)	(1.5)	(4.7)	(8.4)	(4.5)	6086.2	<0.000
Allergist	2025	1497	6124	926	10,572	224	138	406	67	835	16,460.0	<0.000
Pulmonary specialist	74 (2.1)	44 (1.4)	602 (3.2)	205 (5.4)	925 (3.1)	16 (0.5)	13 (0.4)	367 (1.9)	148 (3.9)	544 (1.9)	26,878.9	<0.000
Psychologist	215	256	518	67	1056	80	90	304	49	523	26,808.0	<0.000
Dietitian	52	45	127	23	247	4	2	28	6	40	29,028.2	<0.000
Diagnostic endoscopy	2328 (65.9)	1862 (61.3)	6775 (35.6)	1264 (33.5)	12,229 (41.6)	8 (0.2)	10 (0.3)	155 (0.8)	57 (1.5)	230 (0.8)	16,488.2	<0.000
Allergy test	2216 (62.7)	1636	6600 (34.6)	959 (25.4)	11,411 (38.8)	141	55 (1.8)	232	38	466 (1.6)	16,633.2	<0.000
Inpatient visit (any)	316 (8.9)	263	969 (5.1)	282	1830	45	59 (1.9)	751 (3.9)	209	1064	24531.3	<0.000
	(0.0)	(0.1)	(0.1)	()	(0.0)	()	()	(0.0)	(0.0)	(0.0)		
Direct healthcare costs, \$	US, mean (SI	D) <sup>c</sup>									t value <sup>d</sup>	p valu
Total*	19,088 (32,555)	16,832 (26,984)	10,643 (25,039)	13,010 (30,451)	12,601 (27,154)	2211 (12,129)	2980 (11,413)	4621 (16,888)	7903 (23,211)	4584 (16,956)	-90.6	<0.000
Pharmacy	2491 (5716)	3082 (11,573)	2110 (9591)	2974 (15,592)	2367 (10,427)	385 (1889)	709 (3952)	1255 (7401)	2243 (8242)	1221 (6820)	-49.3	<0.000
Medical	16,597 (30,821)	13,749	8533 (21,939)	10,036 (24,485)	10,234 (23,732)	1825	2271 (10.174)	3366 (14.176)	5660 (20,183)	3362 (14.469)	-82.6	<0.000
ER	784	1146 (3190)	958 (3193)	763	931 (3221)	240	283 (1674)	283 (1556)	294 (1514)	280	-57.8	<0.000
Outpatient	10,138	8113	4596	5067	5686	1006	1122	1619	2689	1632	-111.5	<0.000
Inpatient	2821	2789	1549	2573	1961	353	691	1046	1965	1044	-24.4	<0.000
Diagnostic endoscopy	7272	6389	2498	2280	3445	24	24	104	83	83	-80.4	<0.000
Other outpatient <sup>9</sup>	2853	1701	(4635)	1632	1655	(459) 226	175	418	(040) 711	408	-57.1	<0.000

Participants could report more than one category of HCRU; each HCRU parameter was only reported once per participant. P values are reported for comparisons between the overall groups for patients with EoE versus matched controls without EoE. <sup>a</sup>Matched parameters included: age, sex, geographic region as of the index date, Charlson comorbidity index at baseline, and length of continuous enrolment from the eligibility start date to the index date. <sup>b</sup>McNemar's X<sup>2</sup> test was used to compare HCRU in patients with EoE versus matched controls without EoE. All parameters had a degree of freedom of 1. <sup>c</sup>Direct healthcare costs were adjusted to 2019 US dollars using the consumer prices index to account for cost variations. <sup>d</sup>The paired t-test was used to compare direct healthcare costs over a 12-month period for patients with EoE versus matched controls without EoE. All parameters had a degree of freedom of 58,793. eTotal healthcare costs included pharmacy costs and medical costs (medical costs included inpatient, outpatient, other outpatient, ER, and diagnostic endoscopy medical costs). <sup>f</sup>Including esophageal dilation. <sup>g</sup>Other outpatient costs included costs incurred at the following locations: home health care, hospice facilities, rehabilitation centers (inpatient and outpatient), psychologist visits (inpatient and outpatient), inpatient other, long-term care, other outpatient pharmacy, skilled nursing facility, surgical centers and any other relevant locations. EoE, eosinophilic esophagitis; ER, emergency room; GERD, gastroesophageal reflux disease: HCRU, healthcare resource utilization: SD, standard deviation.