15112

Epidemiology of atopic dermatitis in children aged 6-11 years: A cross-sectional Study in the United States, Canada, Europe, and Japan

Jonathan I. Silverberg, MD, PhD, MPH, Department of Dermatology, George Washington School of Medicine; Abhijit Gadkari, Regeneron Pharmaceuticals; Eric L. Simpson, MD, MCR, Oregon Health & Science University; Stephan Weidinger, Department of Dermatology and Allergy, University Hospital Schleswig-Holstein; Paola Mina-Osorio, MD, PhD, Regeneron Pharmaceuticals; Lysel Brignoli Kantar, Grèce Saba, PharmD, Kantar Health Division; Miriam C. Fenton, Laurent Eckert, PhD, Sanofi

Background: This study aimed to estimate the prevalence and severity of AD in children aged 6-11 years.

Methods: A cross-sectional, web-based, parent-report survey was administered in the US, Canada, France, Germany, Italy, Spain, the UK, and Japan. Children were categorized as having AD if the following 2 criteria were met: parent-report of ever being diagnosed with AD (eczema with/without skin allergy) by a physician AND positive to ISAAC criteria. Among children with AD treated with a prescription medication in the past 12 months, AD severity (mild, moderate, severe) was determined using the Patient-Oriented Eczema Measure (POEM) and patient global assessment (PGA) in the past week.

Results: The samples were representative of the countries' general population with respect to age, gender, regions, and urban/rural split. One-year diagnosed AD prevalence estimates were: US, 10.0%; Canada, 13.3%; France, 17.1%; Germany, 9.3%; Italy, 19.5%; Spain, 17.3%; UK, 14.9%; Japan, 10.3%. Across countries, 84.4%-91.0% of children with diagnosed AD were treated with prescription medication in the past 12 months. Of these treated children 28.9%-68.7%, 24.6%-60.4%, and 2.5%-13.0% children were categorized as having mild, moderate, and severe AD, respectively, based on the POEM. Based on the PGA, 50.8%-73.2%, 24.5%-47.3%, and 1.8%-8.4% of treated children were categorized as having mild, moderate, and severe AD, respectively.

Conclusions: This international study of children aged 6-11 years estimated that prevalence varied from 10.0% in the US to 19.5% in Italy and severe AD by PGA varied in prescription medication-treated children from 1.8% in Germany to 8.4% in Canada.

Commercial disclosure: This study was funded by Sanofi and Regeneron Pharmaceuticals (100%).

15149

Cost-benefit analysis of traditional biopsy pathway vs noninvasive diagnostic techniques for suspected skin malignancies

Nadiya Chuchvara, BA, Department of Pathology, Center for Dermatology, Rutgers Robert Wood Johnson Medical School; Catherine Reilly, BS, Rutgers Robert Wood Johnson Medical School; Radhika Srivastava, BA, Department of Dermatology, Rutgers Robert Wood Johnson Medical School; Attiya Haroon, MD, PhD, Babar Rao, MD, Rutgers Robert Wood Johnson Medical School

The impact of melanoma and nonmelanoma skin cancer (NMSC) in the United States is vast. The American Cancer Society predicts 96,480 new cases of—and 7230 fatalities from—melanoma in 2019, with a 3% annual rate of increase in those 50 years and older. Though less fatal, NMSC represents 3/4 of cancers diagnosed. The current gold standard for diagnosis of suspected cutaneous malignancy is visual assessment followed by biopsy and histopathologic assessment, utilization of which continues to rise despite noninvasive diagnostic innovations. Since adults aged 65 and older carry the highest prevalence of skin cancer, we analyzed 2017 Medicare Part B National Summary data. Over 5.3 million skin biopsies are performed annually, resulting in $289 million in health care costs. The number needed to biopsy (NNB) in order to obtain a positive result ranges from 9.2-26 for melanoma and 2.2-2.4 for any cutaneous malignancy, rendering the majority of biopsies unnecessary. Of the pigmented lesions biopsied, 83.1% are benign or mildly dysplastic (requiring no re-excision). The remaining dysplastic nevi that are re-excised rarely result in a clinically significant upgrade in diagnosis or prevention of malignant transformation. In addition, scarring has a negative psychosocial impact on patients. We therefore examine the factors that contribute to rising biopsy rates, and explore the role of noninvasive diagnostic techniques in improving biopsy decision-making. Specifically, we focus on the potential to increase the malignant to benign ratio using ancillary techniques such as dermoscopy, reflectance confocal microscopy, pigmented lesion gene expression assay, and optical coherence tomography.

Commercial disclosure: None identified.

15154

Incidence of psoriatic arthritis in patients with psoriasis: A population-based cohort study in Swedish routine clinical care

Ingrid Lindberg, MSc, Quantify Research, Stockholm, Sweden; Kirk Geale, MSc, PhD(c), Dermatology, Quantify Research, Umeå University; Mathias Lilja, MSc, Quantify Research AB; Craig Richardson, Novartis Pharma; Amie M. Scott, MPH, KMK Consulting; Haijun Tian, Novartis Pharmaceuticals Corporation

Background: Psoriasis is a common chronic, immune-mediated inflammatory disease affecting 2%-4% of the population. Many psoriasis patients ultimately develop psoriatic arthritis (PsA), but rate of onset and progression is unclear.

Methods: A cohort of adult psoriasis patients treated in secondary care (identified in the national patient registry) were enrolled and followed from first psoriasis diagnosis (ICD-10: L40.0-4 or L40.8-9) during 2007-2017 (index date) until PsA onset or censoring (death, emigration, or data extraction). Those who immigrated or received a PsA diagnosis (ICD-10: L40.5, M07.0-3, or M09.0) during the two years prior to index were excluded. Raw incidence rates per 100 patient-years were calculated overall and by mutually exclusive treatment classes (disease severity proxy), assigned in the pre-index period from 01 July 2005 to index, using the following hierarchy: non-systemic < phototherapy < conventional systemic < biologic/apremilast. Cumulative incidence was calculated for all patients.

Results: 125,534 psoriasis patients (non-systemics 111,285; phototherapy 5227; conventional systemics 7451; biologic/apremilast 1571), 52% female, were included in the study (mean age 54.87, average 5.26 years at risk). 10,118 PsA onset events were observed. Incidence of PsA in psoriasis patients overall was 1.53 per 100 patient-years and 1.35, 1.46, 3.66, and 4.53 in those receiving non-systemic treatment, phototherapy, conventional systemics, and biologic/apremilast treatment, respectively. Cumulative incidence of PsA in psoriasis patients was 4.18%, 6.54%, and 8.00% at 2, 5, and 10 years' follow up, respectively.

Conclusions: PsA onset is common among psoriasis patients. The highest incidence rate was observed in patients receiving biologic/apremilast treatment who likely have the most severe psoriasis.

Commercial disclosure: 100% sponsored by Novartis.

15156

Autoimmune cutaneous disorders associated with PD-1 and PD-L1 inhibitors: Pharmacovigilance analysis of the FDA Adverse Event Reporting System from the Research on Adverse Drug Events and Reports program

Rohail Memon, BA, Ryan C. Kelm, MD, Department of Dermatology, Feinberg School of Medicine, Northwestern University; Maia K. Erickson, BA, Jennifer N. Choi, MD, Feinberg School of Medicine, Northwestern University; Anne E. Laumann, MBChB, MRCP(UK), Dennis P. West, PhD, Northwestern University; Beatrice Nardone, MD, PhD, Department of Dermatology, Feinberg School of Medicine, Northwestern University, Chicago

Background: Autoimmune cutaneous disorders (AICD have been inconsistently reported during treatment with PD-1 (nivolumab, pembrolizumab, cemiplimab) and PD-L1 (atezolizumab, avelumab, durvalumab) checkpoint inhibitors. Case reports exist in the literature for 2 AICDs, vitiligo (VI) and lichen planus (LP), but an association with a PD1/PDL1 agents has not been well substantiated. The aim of this study was to determine if an association exists for these AICDs and PD-1 and PD-L1 inhibitors within a large database, the FDA Adverse Event Reporting System (FAERS).

Methods: The FAERS database (from FDA approval date for each drug to Q1 2019) was searched for MedDra terms related to AIcAEs of interest (VI and LP) and analyzed using Proportional Reporting Ratio (PRR) for detection of a safety signal with exposure to PD-1 or PD-L1 inhibitors, defined as number of events >3, chi-square result (>4) and the PRR (>2).

Results: A safety signal was detected for PD-1 inhibitors as a class: with both VI (n = 78; PRR: 46.21, 95% CI 36.37-58.71) and LP (n = 45; PRR: 15.49, 95% CI 11.48-20.91), and for PD-L1 inhibitors as a class with both VI (n = 3; PRR: 27.86, 95% CI 8.97-86.54) and LP (n = 3; PRR: 17.86, 95% CI 5.75-55.41).

Conclusions: The FAERS database yielded an association for both PD-1 inhibitors and PD-L1 inhibitors with two cutaneous autoimmune disorders: vitiligo and lichen planus. These findings serve to further inform clinicians about our growing knowledge of the seemingly broad spectrum of cutaneous autoimmune disorders associated with checkpoint inhibition.

Commercial disclosure: None identified.