News and Views

Long-Term Outcomes of Severe Childhood Asthma

Among adults aged 65 years and older, who had severe asthma in childhood, only 1 in 10 achieved asthma remission, while 1 in 3 experienced persistent airflow limitation, according to a 60-year follow-up study of adults with a history of severe childhood asthma published in the journal *Chest*[1].

A 60-year follow-up study was conducted with individuals with a documented history of severe childhood asthma to evaluate their disease characteristics in adulthood. The study included Danish adults who had a history of severe asthma during childhood and had undergone a 4-month stay at an asthma care facility in Kongsberg, Norway, between 1950 and 1979. After an average follow-up of 60 years, the patients were assessed via questionnaires and laboratory tests, spirometry, fractional exhaled nitric oxide (FeNO), bronchodilator reversibility, bronchial provocation with mannitol, and measurements of static lung volumes. Written informed consent was obtained from all participants. Patients in remission had not used any asthma medication and had been asymptomatic within the past 1 year. The others were categorized as having current asthma.

A total of 1,394 individuals were eligible for the study; of these, 232 completed the follow-up. Their mean age was 66.1 years. Among these, 89.7% had current asthma and 10.3% were classified as having asthma remission. Twenty-six percent reported experiencing exacerbations within the previous year; 21.6% had been treated with antibiotics for lower airway infection. Only 15.7% of all the participants were managed in secondary care.

Almost all the participants with current asthma were receiving inhaled controller therapy (83%). And two-thirds of those with current asthma used short-acting β_2-agonists as reliever, while others used long-acting β_2-agonists, inhaled corticosteroids (ICS), or long-acting muscarinic antagonists.

Sixty percent of those having current asthma had allergic rhinitis; 21% had hypertension, 16% had eczema, and 8% had cataract. Participants with persistent asthma had significantly higher total IgE levels, lower forced expiratory volume (FEV1)% predicted, and a reduced FEV1/FVC (forced vital capacity) ratio compared to those in remission. They also showed numerically higher levels of FeNO (26.7 vs. 20.1 ppb) and blood eosinophil count (0.19 vs. 0.17 10^9/L).

The definition of asthma remission used in this study emphasizes symptom management and medication use in the previous 12 months, recognizing asthma management from the patient's perspective. It considers how individuals perceive their symptoms and acknowledges that the treatment they report through questionnaires may differ from the prescribed treatment. This study offers valuable insights into the long-term prognosis of severe childhood asthma. It showed that nearly 90% of patients with a history of severe childhood asthma continued to have asthma during adulthood at a mean age of 66 years. Those with persistent asthma exhibited impaired lung function and elevated levels of type 2 inflammatory biomarkers compared to the 10% in remission. Hence, severe childhood asthma is a risk factor for potentially debilitating lung disease later in life.

Reference

1. Savran O, et al. Characteristics of adults with severe asthma in childhood: a 60-year follow-up study. Chest. 2024;166(4):676-84.

UACR: A Risk Factor for Adverse Cardiovascular Outcomes in Type 2 Diabetes?

A raised urinary albumin-to-creatinine ratio (UACR), even within the normal range, is associated with a higher risk of major adverse cardiovascular events (MACE) and total mortality in patients with type 2 diabetes. These findings from a study were published in the April 2024 issue of the *Journal of Clinical Endocrinology & Metabolism*[1].

A post hoc analysis of 10,171 participants from the Action to Control Cardiovascular Risk in Diabetes (ACCORD) study and its follow-up study, ACCORDION was conducted to investigate the association between UACR and cardiovascular outcomes and mortality in patients with type 2 diabetes. These participants had baseline UACR data available. UACR is often used as a marker for kidney damage in diabetic patients. Univariate and multivariate Cox proportional hazard regression analyzes were conducted to examine the association between UACR and the risk of MACE and total mortality. The study also assessed the additional predictive value of UACR beyond other known risk factors for MACE and total mortality. Similar methods were used to analyze the correlation between UACR and MACEs and total mortality within the normal range.

Over the 8.83 years (median) of follow-up, a substantial proportion of participants experienced MACE and total mortality. Out of the 10,171 participants, 1,808 (17.78%) experienced MACE (nonfatal myocardial infarction, nonfatal stroke), and 1,934 (19.01%) died during the follow-up period. After adjusting for traditional cardiovascular risk factors, a significant association between UACR and the risk of both MACE and total mortality was seen on multivariate analysis. Importantly, the inclusion of UACR in the conventional risk model improved the predictive efficacy for both MACE and total mortality. Participants with elevated UACR had higher systolic and diastolic blood pressure (BP), glycosylated hemoglobin (HbA1c), triglycerides, very-low-density lipoprotein (VLDL) cholesterol and lower high-density lipoprotein (HDL) cholesterol.

According to this research, patients with T2DM who have a UACR of 10 to 30 mg/g are more likely to experience MACE and to die than those whose UACR is <10 mg/g. This study therefore suggests that UACR might be a sensitive marker for identifying individuals at increased risk, even if their UACR levels were within a clinically accepted normal range, which is taken to be below 30 mg/g. Hence, UACR values should be considered alongside traditional cardiovascular risk factors in clinical practice for risk assessment. "Early assessment of the UACR in patients with T2DM is important" suggest the authors. By doing so, health care providers may be better able to identify high-risk individuals and tailor interventions accordingly to mitigate the risk of adverse cardiovascular events and mortality in their patients with type 2 diabetes.

Reference

1. Zeng C, et al. Association of urine albumin to creatinine ratio with cardiovascular outcomes in patients with type 2 diabetes mellitus. J Clin Endocrinol Metab. 2024;109(4):1080-93.

Impact of Induction Timing on Maternal and Neonatal Outcomes

About half of the women with prelabor rupture of membrane (PROM) experience spontaneous labor following induction of labor at 24 hours compared to 12 hours. But they were at higher risk of chorioamnionitis, suggests a retrospective study published in the *American Journal of Obstetrics & Gynecology*[1].

This study was conducted at a single tertiary center between 2020 and 2023 to investigate the maternal and neonatal morbidity outcomes between induction of labor at 12 hours in 802 women versus 24 hours in 962 women following PROM. Women presenting with complications necessitating immediate delivery and multiple pregnancies were excluded from the study group. The study protocol was updated on July 1, 2021 to extend the conservative management duration by administering oxytocin after 24 hours instead of 12 hours post-PROM. The rate of chorioamnionitis was compared between two induction protocols for women at term with PROM and who did not show signs of active labor upon admission. Several differences were observed between the two groups. Half of the women (50.4%) in the 24-hour protocol group experienced spontaneous labor compared to the 12-hour protocol group (41.5%). They also had a higher rate of chorioamnionitis (7.5% vs. 4.7%). Cesarean deliveries occurred at similar rates between the two groups (16.3% vs. 17%). A higher percentage of neonates born after the 24-hour protocol required intensive care with neonatal intensive care unit admission rate of 6.2% vs. 3.6% in the 12-hour protocol group. They also required more antibiotics (5.7% vs. 2.9%) and also experienced respiratory distress (4.2% vs. 1.0%).

In the study, it was observed that among women with a previous vaginal delivery, the rate of inductions was lower following the 24-hour protocol compared to the 12-hour protocol (46.5% vs. 57.3%). However, maternal and neonatal outcomes were found to be similar between the two groups. On the other hand, among women with a previous cesarean delivery, the rates were lower following the 24-hour protocol compared to the 12-hour protocol, for oxytocin use (20.3% vs. 43.2%) and cesarean delivery (28.9% vs. 48.6%).

These findings suggest potential differences in induction practices and maternal and neonatal outcomes based on previous delivery history. These have potential implications for the management of term PROM. Hence, "shared decision-making" is crucial in the management of term PROM, state the authors. Women should be informed about the lower chance for induction and the higher risk of chorioamnionitis associated with the 24-hour induction protocol. They further suggest that parous women and those with a history of previous cesarean delivery may benefit from longer expectant management. Hence, past delivery history must be taken into consideration when making management decisions for term PROM.

Reference

1. Shqara RA, et al. 97: Induction of labor at 12 vs. 24-hours for prelabor rupture of membranes: a retrospective study. Am J Obstet Gynecol. 2024;230(1 Suppl):S71.

COPD: A Potential Risk Factor for Herpes Zoster

Persons with chronic obstructive pulmonary disease (COPD) nearly three times more likely to develop herpes

zoster (HZ) compared to those without COPD, according to a study published in the *Clinical Respiratory Journal*[1].

In this retrospective cohort study, the researchers compared the incidence rates of HZ between persons with and without COPD in the United States. Data for the study was obtained from an insurance database from January 2013 to December 2018.

A total of 1,61,970 participants with a diagnosis of COPD were categorized as $COPD^+$, while 9,643,522 participants without COPD diagnosis were grouped as $COPD^-$. Those with a history of HZ, prior HZ vaccination, postherpetic neuralgia (PHN), or HZ ophthalmicus were excluded from the study. Participants with COPD tended to be older in age, have more comorbid conditions and also used steroids more frequently than those without COPD. The incidence rate of herpes zoster was significantly higher in the $COPD^+$ cohort (13.0 per 1,000 person-years) compared to the $COPD^-$ cohort (2.3 per 1,000 person-years) with an adjusted incidence rate ratio (aIRR) of 2.77. COPD patients had a 5.7-fold higher incidence rate of HZ compared to those without COPD, even after adjustment.

The unadjusted incidence rate of PHN was 1.7 times higher in the $COPD^+/HZ^+$ group (64.8 per 1,000 person-years) compared to the $COPD^-/HZ^+$ cohort (37.1 per 1,000 person-years). However, after adjustment, this association was not statistically significant with aIRR of 1.07. The incidence rates of HZ and PHN increased with age across the cohorts. After adjusting for potential confounders, adults with COPD were found to have a 2.8-fold increased risk of developing HZ compared to those without COPD. These findings underscore the need for greater awareness about the risk of HZ, which is a very painful condition, in COPD patients. They also establish the importance of proactive targeted prevention strategies, including Shingles vaccination for those at higher risk.

Reference

1. Thompson-Leduc P, et al. Chronic obstructive pulmonary disease is associated with an increased risk of herpes zoster: a retrospective United States claims database analysis. Clin Respir J. 2022(12):826-34.

Central Obesity and Risk for Pelvic Organ Prolapse

Women with central obesity are at a higher risk of incident pelvic organ prolapse (POP). This risk is particularly pronounced in those younger than 60 years of age or do not have a history of hysterectomy. These findings were published online October 24, 2024, in the journal *Obstetrics & Gynecology*[1].

This prospective study was conducted to ascertain the association between central and general obesity and the risk of incident POP. A total of 2,51,143 participants, aged 39 to 71 years, without a history of POP from the UK Biobank were enrolled for the study between 2006 and 2010. Baseline data for waist/height ratio and body mass index (BMI). Central obesity was defined as waist/height ratio ≥0.5. Nearly 61% were postmenopausal and 17% had undergone hysterectomy prior to their enrollment for the present study.

Results showed 9,781 cases of POP over the median follow-up duration of 13.8 years. The risk of POP was increased by 48% among participants with central obesity, independent of BMI, with a hazard ratio (HR) of 1.48. Approximately 21.7% of all POP cases were attributable to central obesity.

The risk was 23% higher among women with overweight without central obesity (BMI 25-29.9 and waist/height ratio <0.5) with HR of 1.23. This accounted for 2.0% of all POP cases that were identified in the study. The association between risk of POP and central obesity was stronger among subjects younger than 60 years (vs. ≥60 years) (57% vs. 39%) and those without a history of hysterectomy (54% vs. 27%).

These findings therefore suggest that central obesity and overweight without central obesity are risk factors for POP. Combining waist-to-height ratio with BMI provides a more accurate assessment of risk for POP compared with using either alone. Higher waist/height ratio among women with the same BMI face a greater risk of POP than those with a normal ratio.

Reference

1. Si K, et al. Association of central and general obesity measures with pelvic organ prolapse. Obstet Gynecol. 2025;145(1):108-14.

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