News and Views

Role of FEV3/FVC Ratio in Detection of Early COPD

Individuals with normal spirometry but reduced forced expiratory volume in 3 seconds to forced vital capacity (FEV3/FVC) ratio are more likely to experience accelerated decline in lung function and a nearly fivefold higher risk of chronic obstructive pulmonary disease (COPD) incidence than those with high ratio, suggests a study published in the *International Journal of Chronic Obstructive Pulmonary Disease*[1].

This prospective, community-based cohort study from the Early Chronic Obstructive Pulmonary Disease (ECOPD) study project evaluated whether the ratio of FEV3/FVC is associated with structural lung abnormalities on computed tomography (CT) and whether it could predict incident COPD in persons with normal baseline spirometry. The study included adults with normal lung function (post-bronchodilator FEV1/FVC ≥0.70 and FEV1 ≥80% predicted); of the 981 participants enrolled, 807 completed 3 years of follow-up.

Participants were classified into tertiles based on post-bronchodilator FEV3/FVC as high: ≥95.5%, medium: 91.9%-95.4%, and low: ≤91.8%. The study outcomes were acute respiratory events, annual lung function decline, and incidence of COPD. Participants were evaluated via questionnaires, spirometry, CT scans, and impulse oscillometry.

At baseline, those in the lowest tertile were older, predominantly male, more likely to be smokers; they also showed a lower baseline post-bronchodilator FEV1/FVC (74.0%) compared to those with high FEV3/FVC (85.1%). The prevalence of emphysema was also higher in this group; 53.5% vs. 18.3%, respectively.

Over the follow-up period of 3 years, the annual decline in post-bronchodilator FEV1 was significantly greater in the low-FEV3/FVC group with adjusted mean difference of 10 mL. This group also exhibited a markedly increased risk of developing COPD (19.4%) compared with those in the highest tertile (1.9%) with adjusted relative risk of 4.96. No between-group difference in the rates of acute respiratory events was observed.

Hence, as an easily obtainable measure from routine spirometry, FEV3/FVC may serve as "a useful composite marker" for the detection of early COPD before the development of overt airflow obstruction. "The ratio shows potential for primary care screening though further studies are needed to establish population-specific thresholds and confirm its clinical utility in COPD prevention strategies", the authors conclude.

Reference

1. Li Y, et al. Reduced FEV_3/FVC as an early indicator of COPD in individuals with normal spirometry: a prospective analysis from the ECOPD Study. Int J Chron Obstruct Pulmon Dis. 2025;20:3791-802.

Gender Disparities in Post-Stroke Recovery

Women who survive stroke experience more difficulty in performing daily tasks such as eating, dressing, cooking, and driving compared to the male survivors of stroke, according to findings from a new study published in the journal *Neurology*[1,2].

The study obtained data from the Brain Attack Surveillance in Corpus Christi (BASIC) Project in Corpus Christi Project (South Texas, 2014-2019), which included patients aged ≥45 years who had suffered their first ischemic strokes. Demographic, functional, neurologic, quality of life and cognitive information was collated from medical records of the participants. Post-stroke recovery was evaluated at 3, 6, and 12 months after stroke. Difficulties with 7 activities of daily living (ADL) and 15 instrumental activities of daily living (IADL) were measured to assess functional outcomes, with scores ranging from 1 to 4. A score of 2 indicated some difficulty completing daily tasks, while a score of 3 indicated a lot of difficulty.

The objective of the study was to determine the estimated sex-specific changes in post-stroke functional, neurologic, quality of life, and cognitive outcomes. The present study enrolled 1,046 stroke survivors with average age 66 years. Nearly half (47.6%) of the study group was female.

Women had higher adjusted average ADL/IADL scores than male participants at 3, 6, and 12 months indicating poorer recovery. While the female participants had an average score of 2.39, the male participants had an average score of 2.04 at 3 months. But only female survivors showed a significant decline in ADL/IADL scores from 3 to 12 months (adjusted mean difference −0.08).

After adjusting for factors such as age, race and ethnicity, education and insurance status, researchers found female participants' average scores were higher by 0.13, 0.10, and 0.09 at 3, 6, and 12 months, indicating poorer recovery

compared to the male participants. No significant sex-based differences were noted for the other outcomes. Both men and women showed improvement in neurological function, whereas a significant improvement in cognitive function was observed only among male survivors (adjusted mean difference in 3MSE score 0.97). These improvements were primarily influenced by recoveries from 3 to 6 months.

This study shows that female stroke survivors had poorer functional outcomes up to 12 months (vs. men), while other outcomes were comparable. Although both men and women participants showed recovery after 3 months, the course of recovery differed by sex.

These findings highlight the need for early and ongoing assessments of the patient's ability to carry out daily tasks post-stroke, particularly in women to improve recovery, and for sex-specific approaches to interventions in the chronic phase of stroke. New interventions such as muscle-strengthening activities should consider the recovery patterns. Nevertheless, the authors note that the results cannot be generalized since this is a single-community study; further studies are needed for replication in other populations. Lack of data on the use of rehabilitation services was another limitation of the study.

References

1. Chen C, et al. Sex differences in outcomes over the first year after ischemic stroke: a population-based longitudinal study. Neurology. 2026;106(2):e214508.
2. American Academy of Neurology (AAN) News Release. Dated December 17, 2025. Available at: https://www.aan.com/PressRoom/Home/PressRelease/5303. Accessed December 30, 2025.

Prognostic Value of the Lactate-Albumin Ratio in Critically Ill Non-CRRT-Dependent CKD Patients

The lactate-albumin ratio (LAR) is a prognostic marker in patients with chronic kidney disease (CKD) receiving intensive care but not continuous renal replacement therapy (CRRT), as per findings of a study published online in *BMC Nephrology*[1]. Each unit increase in the LAR was associated with an approximately 30% increase in mortality risk at 30 days.

Rou Xie from the Dept. of Nephrology, Hengyang Medical School, University of South China and co-authors note that the association of LAR with mortality in patients with CKD is unreported. To address this gap, they examined the association between the LAR and all-cause mortality among seriously ill patients with CKD who were not receiving CRRT in a retrospective cohort study. The LAR is a composite biomarker indicative of oxidative stress, inflammatory status, and metabolic disturbance.

Using data from the medical information mart for intensive care IV (MIMIC-IV) database, 987 adult CKD patients, median age 77.2 years, admitted to the ICU for the first time between 2008 and 2019, were enrolled for the study; majority were males (61%). The initial admission was considered in cases of multiple hospitalizations. Lactate and albumin values obtained within the first 24 hours of ICU admission were used to calculate LAR. The main study outcomes were all-cause mortality rates at 30 days, 90 days, and 365 days.

The LAR was divided into CKD 1-2 (early), CKD 3-4 (middle), and CKD 5 (late) stages based on the CKD stage (Kidney Disease Improving Global Outcomes 2012 CKD guideline). The association was most pronounced in patients with middle stage CKD (stages 3-4). The overall mortality rate among CKD patients with no CRRT was high, with rates of 38.9% at 30 days, 41.6% at 90 days, and 41.8% at 365 days.

When analyzed as a continuous variable, higher LAR was independently associated with increased mortality at all-time points evaluated. In the fully adjusted model, each unit increase in LAR was linked to a 30% higher risk of 30-day mortality (hazard ratio [HR] 1.30) and a 32% (HR 1.32) higher risk of mortality at both 90-days and 365-days. A positive, nonlinear relationship was observed between LAR and mortality rates in these patients. The HR was 1.0 at an LAR cut-off of 0.66. Above this threshold, mortality risk initially increased with increase in LAR, but the rate of this rise gradually declined and eventually plateaued.

The LAR was also found to significantly predict 30-day mortality within some subgroups such as individuals with heart failure (HR 1.62), obesity (HR 1.67), those without diabetes (HR 1.58) and alcoholic hepatitis (HR 1.61), including patients who did not receive antibiotics (HR 1.62).

This study provides preliminary evidence supporting the use of LAR as a prognostic biomarker for non-CRRT-dependent CKD patients in the ICU. The cut-off value (>0.66), as determined in this study, may help in early risk stratification and adjust management strategies for this high-risk group.

Reference

1. Xie R, et al. Relationship between lactate-albumin ratio and all-cause mortality in chronic kidney disease without continuous renal replacement therapy in the intensive care unit ward: a retrospective analysis of the MIMIC-IV database. BMC Nephrol. 2025;26(1):685.