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# New Data Presented at ADA 2025 Highlights Burden and Risk Associations of Cardiac Arrhythmias in Patients with Type 2 Diabetes and Chronic Kidney Disease

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Retrospective real-world analyses of patients with type 2 diabetes—some of whom also had chronic kidney disease—demonstrate cardiac arrhythmias present frequent and early, often preceding major cardiovascular events (MACE)

SAN FRANCISCO, June 23, 2025 (GLOBE NEWSWIRE) -- **iRhythm Technologies, Inc.** (NASDAQ:IRTC) announced the results from two large-scale real-world studies presented at the American Diabetes Association's 85th Scientific Sessions (ADA 2025). The analyses reveal that cardiac arrhythmias are common and often occur early in people with type 2 diabetes (T2D)—especially those who also have chronic kidney disease (CKD). These findings suggest a critical opportunity to enhance early detection strategies in at-risk cardiometabolic populations.

The studies examined longitudinal claims data from over 30 million U.S. adults, providing new insights into how arrhythmias—often asymptomatic—cluster around major disease inflection points. In T2D patients, arrhythmias were frequently identified prior to or shortly after diagnoses of CKD or major adverse cardiovascular events such as stroke or heart failure.

Cardiac arrhythmias—conditions in which the heart beats too fast, too slow, or irregularly[1]—are a serious public health concern. In the general U.S. population, they affect roughly 1 in 20 adults[2]. But in people with type 2 diabetes and chronic kidney disease—already at elevated cardiovascular risk[3]—new data reveal that arrhythmias occur more frequently, and often much earlier, than previously recognized.

Left undetected, certain arrhythmias can lead to stroke, heart failure, hospitalization, or even death[4-6]. That's why early detection is critical—giving clinicians a chance to act before complications arise. Yet in most diabetes care pathways, arrhythmias are not routinely screened for[7], and many patients experience no symptoms at all[8].

"These findings support a growing body of evidence that heart rhythm disorders are not just late-stage complications—they often emerge much earlier, silently, and in ways that may help us better identify patients at rising risk," said Mintu Turakhia, MD, iRhythm's Chief Medical Officer, Chief Scientific Officer, and EVP of Product Innovation. "For patients living with diabetes and kidney disease, earlier detection of these arrhythmias may offer a window to take action before more serious events occur."

Cardiac Arrhythmias — Early and Frequent

In the "**Incidence of Cardiac Arrhythmias in Patients with Diabetes: A Real-World Study**" (T2D-only analysis):

* In a T2D cohort of 8.8 million individuals, over 1.1 million individuals were diagnosed with major arrhythmias.
* 47% of arrhythmias occurred after diabetes diagnosis, with a median time of 496 days.
* Among patients who experienced a MACE, 25% did so on or after arrhythmia detection, while 45% of MACE occurred beforehand—pointing to a complex but tightly linked risk timeline.

In the "**Incidence and Timing of Major Arrhythmias in T2D and CKD: A Real-World Analysis**" (T2D + CKD population):

* Among 3.2 million T2D patients who then received a CKD diagnosis, 670,003 (21%) developed a major arrhythmia, of which 397,359 (59%) occurred before CKD diagnosis.
* Median time from T2D to arrhythmia was 488 days; median time from arrhythmia to MACE was 800 days.
* Notably, 17% of patients who experienced a MACE did so within three days of their arrhythmia event.

These findings suggest that arrhythmias are not only common in people with diabetes and kidney disease, but are often detected for the first time in close proximity to major cardiovascular events.

Building on Prior Findings: A Broader Pattern Emerging

These new results build upon **findings presented by iRhythm at the American Heart Association's (AHA) 2024 scientific sessions**, which demonstrated that patients with diabetes and COPD who developed arrhythmias had:

* Twice the hospitalization rate of those without arrhythmias
* 35–50% higher emergency care costs
* Hospital stays up to 5 days longer

Additionally, **real-world data presented at ACC.25** demonstrated that fewer than one in five patients experience a symptom coinciding with an arrhythmic episode. This reinforces the need to monitor patients based upon unique risk factors instead of symptoms.

Across both ADA and AHA datasets, the real-world evidence shows a consistent signal: undiagnosed arrhythmias are clinically consequential and economically burdensome—and early rhythm detection could help change that trajectory.

About the studies presented at ADA 2025

Incidence of Cardiac Arrhythmias in Patients with Diabetes: A Real-World Study

Type 2 Diabetes (T2D) contributes to development of arrhythmias through autonomic dysfunction, electrical remodeling, oxidative stress, and inflammation. This real-world evidence study examined the burden of arrhythmias in T2D and their temporal relationship with major cardiovascular events (MACE). Using a national claims database (Symphony Integrated Dataverse), study investigators identified adults with T2D (2014–2024) experiencing arrhythmias, their timing relative to T2D onset, and associations with cardiometabolic comorbidities. Among 8.8 million adults with T2D (median age: 60 years; 46% male, 54% female), a total of 1.14 million individuals developed a major arrhythmia (Table 1). Of these, 43% occurred prior to T2D; 57% developed on or after T2D. The median time to arrhythmia post T2D was 496 days (range: 1–2,007 days). Hypertension was present in 20%; 38% had at least one metabolic risk factor (chronic kidney disease, dyslipidemia, liver dysfunction, or obesity); 25% experienced a MACE either at the time of or following arrhythmias (median time:1 day; range: 0–1,925 days). MACE occurred in 45% of patients preceding the diagnosis of arrhythmia (median time: 542 days; range: 1–2,373 days). The findings highlight the burden of arrhythmias in T2D and the association between arrhythmias and MACE. Further investigations are warranted to elucidate the potential strategies for early diagnosis, risk stratification and intervention.

Incidence and Timing of Major Arrhythmias in T2D and CKD: A Real-World Analysis

Type 2 diabetes (T2D) is a leading cause of chronic renal disease (CKD). Despite strong links between T2D, CKD, and cardiovascular disease (CV), the incidence and timing of major arrhythmias in this high-risk population remains unclear. This study examined the incidence, timing, and risk associations of major arrhythmias in T2D-CKD patients. Study investigators analyzed Symphony Integrated Dataverse (2018-2024) claims data on adults with CKD (stages 1-4) following T2D, assessing arrhythmia occurrence, timing, and metabolic/CV risk factors. Among 3.2 million T2D patients subsequent CKD diagnosis (51% females, median age 73; 49% males, median age 72), 670,003 (21%) developed major arrhythmias, mainly atrial fibrillation (AF). In 59%, arrhythmias preceded CKD (56% males, median age 73; 44% females, median age 74). Median time from T2D to arrhythmia: 488 days (1-2,362); arrhythmia to CKD: 462 days (1-2,368); arrhythmia to MACE: 800 days (2-2,348). When arrhythmias followed CKD (54% males, median age 75; 46% females, median age 76), CKD-to-arrhythmia median time: 355 days (1-2,003). MACE occurred in 17% (54% males, 46% females; median age 76) within three days of arrhythmia, CKD-to-MACE median time: 461 days (1-1,998). Findings reveal that arrhythmias are common in T2D-CKD and strongly linked to MACE, suggesting that

identifying shared mechanisms between T2D, CKD, and arrhythmias requires innovative diagnostic approaches, including continuous ambulatory EKG monitoring to drive early intervention and precision therapies.

About iRhythm Technologies

iRhythm is a leading digital health care company that creates trusted solutions that detect, predict, and prevent disease. Combining wearable biosensors and cloud-based data analytics with powerful proprietary algorithms, iRhythm distills data from millions of heartbeats into clinically actionable information. Through a relentless focus on patient care, iRhythm's vision is to deliver better data, better insights, and better health for all.

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Source: iRhythm