Abstract

Early Detection of Chronic Kidney Disease in High-Risk Jamaican Communities

Purpose: Chronic kidney disease (CKD) remains underdiagnosed in Jamaica, where hypertension, diabetes, and obesity are prevalent contributors to CKD progression. Despite rising national estimates, data from economically disadvantaged communities are limited. This study assesses albuminuria prevalence, a CKD marker, among individuals accessing dental and pharmacy services in under-resourced Jamaican areas. It also promotes community-based education and outreach to raise CKD awareness and emphasize early detection.

Methods: This observational study assessed the prevalence of chronic kidney disease (CKD) markers among adults who attended Jamaica Dental Mission pop-up clinics in Flankers and Kew Park, Jamaica. Eligible participants included individuals aged 18–89 years, of any gender, who presented for health or dental services and reported one or more CKD risk factors, such as hypertension or diabetes, without a prior CKD diagnosis. All attendees underwent routine clinical screenings conducted by the mission team, including health and dental history, blood pressure measurement, and point-of-care blood glucose testing for those with known diabetes. Adults reporting hypertension or diabetes also received a spot urine microalbumin-to-creatinine ratio (UACR) test to detect early kidney injury. Verbal consent was obtained from participants who chose to complete the anonymous survey. The survey collected demographic data (age, gender, residence, education), self-reported health history (hypertension, diabetes, heart disease), duration of chronic conditions, and screening results. Participants received personalized feedback. A clinical researcher reviewed urine albumin findings, educated participants on CKD risk factors, and counseled those with elevated albuminuria (≥30 mg/g or 3 mg/mmol) to seek follow-up care. Data including demographics, screening metrics, and survey responses were analyzed using descriptive statistics in Excel. Associations were evaluated using Chi-square tests and logistic regression models.

Results: A total of 77 adult participants (mean age range: 65–89 years) were screened during the Jamaica Dental Mission clinics. Approximately 40% had albuminuria, with all values falling within the moderately elevated range (30–300 mg/g). Risk factor analysis revealed strong associations between elevated albuminuria and chronic conditions. Among participants with elevated UACR levels, 14% had diabetes, particularly those with longer disease duration. Hypertension was highly prevalent, with 97% of those with elevated UACR levels also reporting a diagnosis of high blood pressure, and many recording elevated readings during screening. Higher body weight was also common among individuals with albuminuria, as 94% had a body mass index classified as overweight or obese. Notably, 39% of participants reported never having undergone albuminuria testing. Among those with elevated UACR, only two individuals reported taking medications known to slow CKD progression. These findings suggest a significant gap in early detection and management of CKD in under-resourced Jamaican communities.

Conclusion: This study identified a high prevalence of elevated urine albumin-to-creatinine ratios among under-resourced Jamaican adults, with strong correlations to diabetes, hypertension, and obesity. These findings underscore the importance of expanding kidney health awareness and screening efforts in Jamaica. Future initiatives should prioritize integrating routine CKD screening into community outreach, while also enhancing education around key risk factors such as hypertension, diabetes, and obesity. Health care programs should incorporate screening, education, and referral services into existing community initiatives. A sustainable care model that embeds these components may help reduce the long-term burden of CKD in underserved populations.