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**ORAL SYMPTOMS AND SALIVARY FUNCTION AND ASSOCIATION WITH MORTALITY IN HAEMODIALYSIS PATIENTS: A PROSPECTIVE COHORT ANALYSIS (ORAL-D SUBSTUDY)**

Marinella Ruospo<sup>1</sup>, Suetonia Palmer<sup>2</sup>, Giusi Graziano<sup>1</sup>, Patrizia Natale<sup>3</sup>, Valeria Saglimbene<sup>4</sup>, Jonathan Craig<sup>5</sup>, David W Johnson<sup>6</sup>, Marcello Tonelli<sup>7</sup>, Eduardo Celia<sup>1</sup>, Rubén Gelfman<sup>1</sup>, Dulawa Jan<sup>8</sup>, Anna Bednarek-Skubiewska<sup>8</sup>, Marietta Török<sup>8</sup>, Paul Stroumza<sup>8</sup>, Castillo, Domingo Del<sup>8</sup>, Amparo Bernat<sup>1</sup>, Jörgen Hegbrant<sup>1</sup>, Charlotta Wollheim<sup>8</sup>, Letizia Gargano<sup>1</sup>, Giovanni Strippoli<sup>1</sup>

<sup>1</sup>Diaverum Sweden AB, Lund, Sweden, <sup>2</sup>University of Otago Christchurch, Christchurch, New Zealand, <sup>3</sup>University of Bari, Bari, Italy, <sup>4</sup>The University of Sydney, Sydney, Australia, <sup>5</sup>Flinders University at Victoria Square, Adelaide, Australia, <sup>6</sup>Metro South and Ipswich Nephrology and Transplant Service, Brisbane, Australia, <sup>7</sup>University of Calgary, Calgary, Canada and <sup>8</sup>Diaverum, Lund, Sweden

**INTRODUCTION:** Impaired oral symptoms and saliva characteristics are frequently reported in adults treated with long term hemodialysis. We evaluated the prevalence and severity of oral symptoms and salivary function and association with mortality.

**METHODS:** We did a planned analysis in the ORAL-D study, a multinational cohort study involving a standardised oral and dental examination among 4726 haemodialysis patients. We assessed oral mucosal self-reported symptoms (thirst and xerostomia) and salivary characteristics (pH, buffer capacity, flow rate pre/post dialysis). The association with all-cause and cardiovascular mortality was estimated using a Cox proportional hazard regression model adjusted for country, age, sex, education, smoking history, prior myocardial infarction, diabetes, haemoglobin, serum albumin, serum phosphorus, time on dialysis and body mass index.

**RESULTS:** In 4205 adults (mean age  $61.6 \pm 15.6$  years) who underwent an oral examination, the mean salivary pH was 7.45 (SD 1.35), with more than 60% of patients ( $n=1621$ ) having high salivary buffering capacity. The mean pre-dialysis salivary flow rate was 0.83 (SD 0.74) ml/min, and slightly decreased at the end of treatment ( $0.76 \pm 0.80$  ml/min).

During median follow-up of 3.5 years, salivary flow rate was associated with lower all-cause (adjusted hazard ratio (aHR) 0.85, 95% CI 0.76 to 0.95 for pre-dialysis flow rate and aHR 0.84, 95% CI 0.75 to 0.94 for post-dialysis flow rate) and cardiovascular mortality (HR 0.74, 95% CI 0.62 to 0.90 for pre-dialysis flow rate and HR 0.74, 95% CI 0.61 to 0.90 for post-dialysis flow rate). When considering the risk of mortality associated with Xerostomia Inventory items, requiring to sip a drink to swallow better was associated with all-cause and cardiovascular mortality (HR 1.26, 95% CI 1.07 to 1.48 and 1.30, 95% CI 1.02 to 1.66, respectively). Other survey items were associated with all-cause mortality, but not cardiovascular mortality (dry mouth, dry lips, wake up to drink during the night). Similarly, Thirst Inventory items (thirsty during the night and thirsty during the dialytic session) were associated with all-cause mortality.

**CONCLUSIONS:** Oral symptoms are prevalent in haemodialysis patients. Salivary characteristics and related symptoms are associated with mortality.