

Thirst and oral symptoms in people on hemodialysis: a multinational prospective cohort study

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Background Thirst and xerostomia, the subjective complaint of dry mouth, may be increased in people on hemodialysis due to reduced salivary and lacrimal secretion, intravascular volume changes, fluid-restriction, endocrine hormone abnormalities, and medication use. Existing data for the prevalence of thirst and xerostomia are limited.

Objective In this prospective cohort study, we have conducted a detailed global survey on the prevalence of any oral symptoms in hemodialysis.

Methods ORAL-D is a multinational cohort study of oral diseases in consecutive adults on hemodialysis in 75 outpatient clinics selected randomly from a collaborative dialysis network in Europe and South America. We administered xerostomia and thirst inventories based upon validated methodology. We analyzed prevalence data using descriptive analyses.

Results 4324 hemodialysis patients in the participating clinics completed a self-administered questionnaire on oral symptoms. 1274 (30%) patients reported occasional use of candies for dry mouth sensation, 992 (23%) had difficulties swallowing and 2243 (52%) needed to sip to aid swallowing. 1940 (45%) reported waking up during the night to drink, 1565 (36%) reported dry mouth sensation and 2101 (49%) had dry lips. Thirst was a reported problem for 2651 (61%) patients; 3280 (76%) were thirsty during the day and 1995 (46%) during the night. Overall, 1068 (25%) patients reported that thirst influenced their social life.

Conclusion Oral symptoms are highly prevalent in hemodialysis, with marked interference with daily life. Further research will evaluate the impact of these symptoms on clinical outcomes in people in hemodialysis.

1. Prevalence of oral symptoms in patients in the OralD study

Xerostomia	Overall population(N=4324)
Need to sip to swallow	
Never/almost never	2022 (47%)
Occasionally	1080 (25%)
Often	1163 (27%)
Dry mouth	
Never/almost never	2697 (62%)
Occasionally	956 (22%)
Often	609 (14%)
Wake up to drink	
Never/almost never	2325 (54%)
Occasionally	1274 (30%)
Often	666 (15%)
Difficulty eating dry food	
Never/almost never	2826 (65%)
Occasionally	758 (18%)
Often	679 (16%)
Candies for dry sensation	
Never/almost never	2650 (61%)
Occasionally	1013 (23%)
Often	603 (14%)
Difficulty swallowing	
Never/almost never	3275 (76%)
Occasionally	683 (16%)
Often	309 (7%)
Dry skin	
Never/almost never	2257 (52%)
Occasionally	891 (21%)
Often	1117 (26%)
Dry eyes	
Never/almost never	2860 (66%)
Occasionally	795 (18%)
Often	611 (14%)
Dry lips	
Never/almost never	2164 (50%)
Occasionally	1123 (26%)
Often	978 (23%)

* Data given as mean ± standard deviation or percentage as applicable

2. Thirst in patients in the OralD study

Thirst symptoms	Overall population (N=4324)
Problematic thirst	
Never/almost never	1612 (37%)
Occasionally	1038 (24%)
Often	1613 (37%)
Daytime thirst (post-dialysis)	
Never/almost never	983 (23%)
Occasionally	1606 (37%)
Often	1674 (38%)
Nocturnal thirst	
Never/almost never	2266 (52%)
Occasionally	1224 (28%)
Often	771 (18%)
Impact of thirst on social life	
Never	3191 (74%)
Occasionally	696 (16%)
Often	372 (9%)
Thirst before dialysis	
Never/almost never	2491 (58%)
Occasionally	1013 (23%)
Often	756 (18%)
Thirst during dialysis	
Never/almost never	2840 (66%)
Occasionally	963 (22%)
Often	458 (11%)
Thirst after dialysis	
Never/almost never	2380 (55%)
Occasionally	992 (23%)
Often	884 (20%)

* Data given as percentage

Steering Committee: P Stroumza, L Frantzen, Diaverum France; M Leal, Diaverum Portugal; M Torok, Hungary; A Bednarek, J Dulawa, Diaverum Poland; E Celia, G Ruben, Diaverum Argentina; J Hegbrant, C Wollheim, Diaverum Sweden.

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