BURDEN OF ITCH AMONG PATIENTS WITH CHRONIC KIDNEY DISEASE / END-STAGE KIDNEY DISEASE RECEIVING HEMODIALYSIS: RESULTS FROM A PROSPECTIVE PATIENT-REPORTED SURVEY IN THE USA

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BACKGROUND

- Moderate to extreme itch is experienced by up to 45% of patients on hemodialysis (HD).[1]
- Chronic kidney disease-associated pruritus (CKD-aP) can lead to poor sleep quality, reduced quality of life, and depression.[2–4]
- Real-world assessments of CKD-aP from the patient perspective are needed to better understand its impact on patients.

AIM OF THE STUDY

- This study aimed to characterize patients' experience of itch and its resulting burden among individuals with end-stage kidney disease (ESKD) receiving hemodialysis (HD).

METHODS

- Eligible participants of Kantar Profiles general panel or American Association of Kidney Patients patient-advocacy group (PAG) were invited to participate in an online survey if they were:
  - Aged ≥18 years old, resided in the USA, self-reported provider-diagnosed of ESKD, scheduled for in-center or home HD 3-times per week, gave informed consent, and reported any itch by Worst Itch Numerical Rating Scale (WI-NRS) in the past 28 days.
- Participants were stratified using WI-NRS into mild (1–3), moderate (4–6), and severe (7–10) groups.
- Descriptive statistics were used to assess:
  - Participant demographics.
  - Itch- and CKD/ESKD-related clinical characteristics.
  - Itch burden: self reported on a 5-point Likert scale (none, some, moderate, high, and extremely high) and using validated tools (WI-NRS, 5D-Itch, and Self-Assessed Disease Severity).
  - Work productivity and activity impairment (WPAI).
    - 0–100 scale: higher=greater impairment/more unproductive.
  - Sleep quality: sleep quality questionnaire (SQQ).
    - 0–10 scale: 10=itch completely interfered with sleep in the past 24 hours.
  - Provider–patient interactions and itch treatments used.
- Chi-square and one-way analysis of variance (ANOVA) tests were used for categorical and continuous variables, respectively.
  - A *P*-value <0.05 was considered statistically significant.

REFERENCES: 1. Pisoni RL, et al. *Nephrol Dial Transplant* 2006;21:3495–505; 2. Sukul N, et al. *Kidney Medicine* 2021;3:42–53.e1; 3. Weiss M, et al. *Qual Life Res* 2016;25:3097–3106; 4. Plewig N, et al. *J Eur Acad Dermatol Venereol* 2019;33:1429–1435.

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RESULTS

- Survey fielding occurred 12/1/2021–5/31/2022, generating 354 observations.
- Stratification yielded 76, 173, and 105 participants classified as having mild, moderate, and severe itch, respectively.
- Overall, mean age was 45.8 years, 52% were female, and mean time since ESKD-diagnosis and time on HD were 14.4 and 4.4 years, respectively (Table).

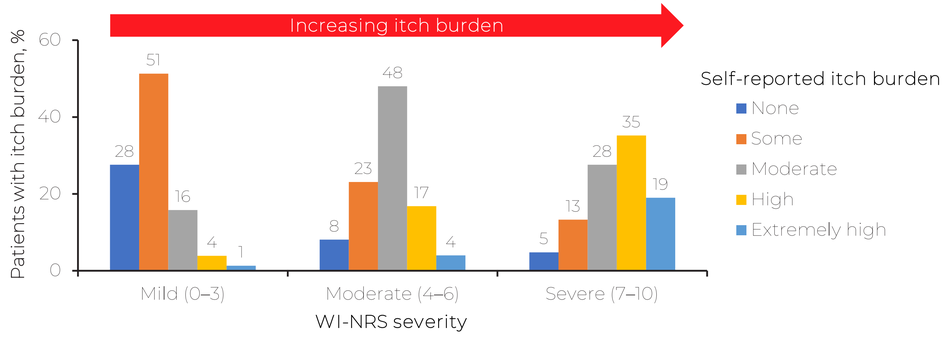
Table: Patient characteristics

	Mild itch (n=76)	Moderate itch (n=173)	Severe itch (n=105)	Overall (N=354)
Years old, mean ± SD	52.2 ± 16.4	45.3 ± 17.1	42.0 ± 13.4	45.8 ± 16.3
Female, n (%)	40 (53)	96 (55)	48 (46)	184 (52)
PAG respondents, n (%)	36 (47)	76 (44)	24 (23)	136 (38)
Years diagnosed with ESKD, mean ± SD	9.1 ± 9.1	20.7 ± 157	7.8 ± 9.0	14.4 ± 9.1
Years on HD, mean ± SD	4.8 ± 4.7	4.3 ± 4.3	4.4 ± 4.9	4.4 ± 4.5
Years skin has itched, mean ± SD	3.7 ± 4.0	3.0 ± 3.1	4.0 ± 5.0	3.4 ± 4.0
WI-NRS, mean ± SD	2.9 ± 1.1	5.5 ± 1.2	7.8 ± 1.2	5.6 ± 2.1
Spoken to provider about itch, n (%)	39 (51)	118 (68)	84 (80)	241 (68)
Provider recommended itch treatment, n (%)	26 (34)	102 (59)	68 (65)	196 (55)

ESKD, end-stage kidney disease; HD, hemodialysis; PAG, patient-advocacy group; SD, standard deviation; WI-NRS, Worst Itch Numerical Rating Scale.

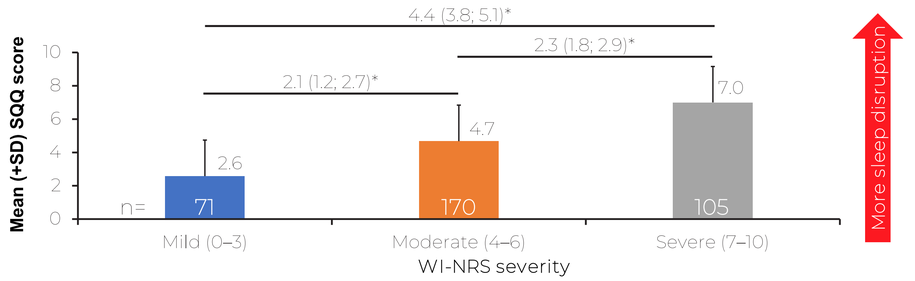
- Proportions of patients self-reporting moderate to extremely high burden of itch were 21%, 69% and 82% in mild, moderate, and severe itch groups, respectively (Figure 1).
- More sleep disruption was seen with worse itch severity: SQQ mean score was 2.6 vs 4.7 vs 7.0 in mild, moderate, and severe itch groups, respectively (Figure 2).
- Greater overall activity impairment, absenteeism, presenteeism and overall work impairment were seen with worse itch severity (Figure 3).
- Overall, 68% of patients spoke with their provider about itch while fewer (55%) received a provider recommendation for treatment (Table).

Figure 1: Self-reported itch burden by itch severity



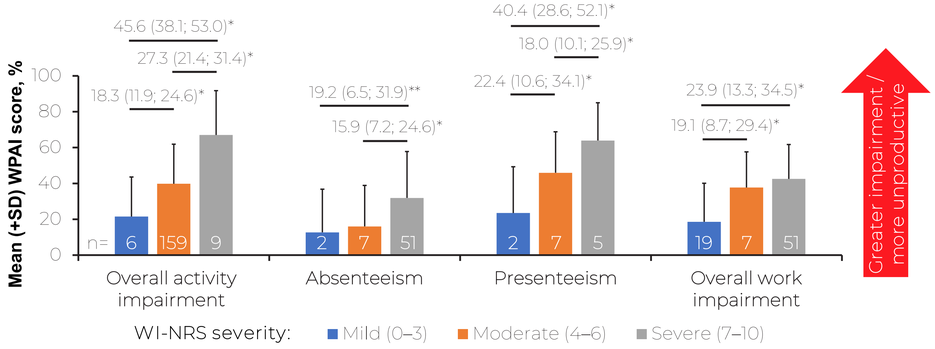
Differences in mild vs moderate, mild vs severe, and moderate vs severe were significant (*P*<0.001).
WI-NRS, Worst Itch Numerical Rating Scale.

Figure 2: SQQ score by itch severity



Differences shown above the bars are in mean (95% CI) SQQ scores. **P*<0.001. CI, confidence interval; SD, standard deviation; SQQ, sleep quality questionnaire; WI-NRS, Worst Itch Numerical Rating Scale.

Figure 3: WPAI scores by itch severity



Differences shown above the bars are in mean (95% CI) WPAI percentage scores. **P*<0.001; ***P*<0.005.
WI-NRS, Worst Itch Numerical Rating Scale; WPAI, Work Productivity and Activity Impairment.

CONCLUSION

- A majority of patients with moderate to severe itch reported moderate to extreme itch-related burden, with more sleep disruption and greater work impairment.
- An unmet need for treatment to address itch burden is suggested by 68% of patients speaking to their provider about itch but only 55% being recommended itch treatment.
- Limitations: data may not be generalizable as mean patient age was younger than the typical HD population.
- Further evidence is needed to better quantify patients' burden from chronic itch.

DISCLOSURES: JT was an employee of Cerner Enviza at the time of study execution; JK and JO are employees of Vifor Pharma, Inc.; LA, AK, and KL are employees of Cerner Enviza; GY reports being a consultant advisory board member for Arcutis Biotherapeutics, Bellus Health, Eli Lilly, Galderma, GSK, Kiniksa Pharmaceuticals, LEO Pharma, Novartis, Pfizer, Regeneron Pharmaceuticals, Inc., Sanofi, Trevi Therapeutics, Vifor Pharma; grants/research funding from Eli Lilly, Kiniksa Pharmaceuticals, LEO Pharma, Novartis, Pfizer; and being an investigator for Regeneron Pharmaceuticals, Inc., Sanofi. Vifor Pharma; KJ reports advisory board participation for Akebia and GSK, and consulting for Vifor Pharma.