

# Characterization of Individuals With Resistant Hypertension and Post-Dexamethasone Suppression Test Cortisol <1.2, 1.2–1.8, and >1.8 µg/dL: Results From the MOMENTUM Study

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## SUMMARY AND CONCLUSIONS

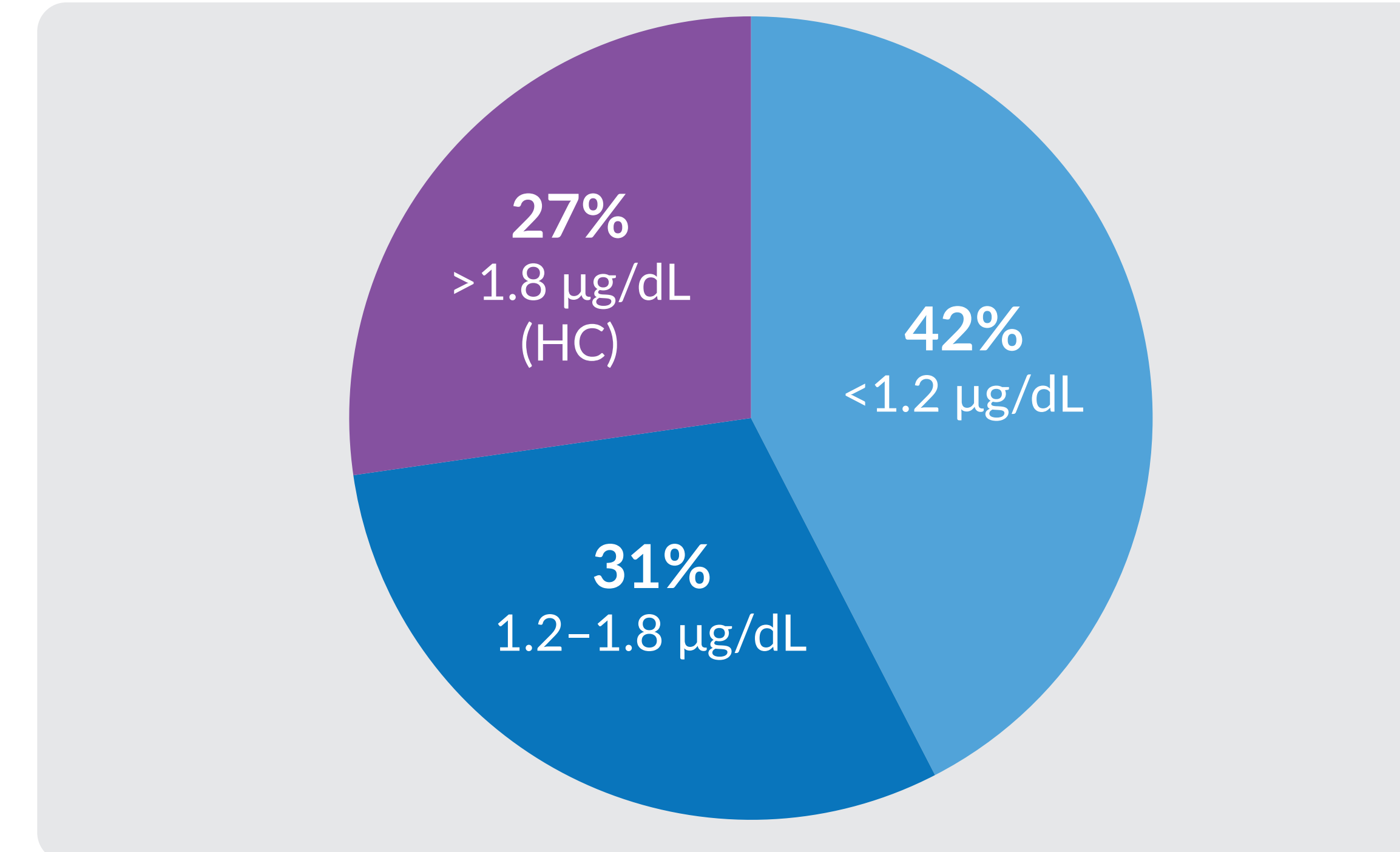
- The MOMENTUM study found a 27% prevalence of endogenous hypercortisolism (HC) among >1,000 individuals with resistant hypertension (rHTN)
- The study also assessed clinical characteristics and comorbidities in the post-dexamethasone suppression test (DST) cortisol subgroups <1.2 µg/dL, 1.2–1.8 µg/dL, and >1.8 µg/dL
- Our findings show a spectrum of cardio-renal-metabolic complications with increasing post-DST cortisol, including increased frequency of cardiac comorbidities, renal dysfunction, and increased medication burden
- These findings underscore the importance of screening for HC in individuals with rHTN and suggest the adverse effects of cortisol may occur below the current diagnostic threshold for HC

## BACKGROUND AND OBJECTIVE

- Approximately 9–18% of individuals with hypertension have resistant hypertension (rHTN), which confers an increased risk of cardiovascular and renal complications and premature mortality<sup>1,2</sup>
- Although recognition of hyperaldosteronism as a treatable endocrine driver of rHTN is increasing, endogenous hypercortisolism (HC) continues to be considered an uncommon contributor<sup>1,2</sup>
- The US, multicenter MOMENTUM study (NCT06829537) established an HC prevalence of 27% in individuals with rHTN<sup>3</sup>
- Prior to MOMENTUM, the CATALYST study (NCT05772169) found an HC prevalence of 24% in individuals with treatment-resistant type 2 diabetes (T2D)<sup>4</sup>
- Both studies used the 1-mg overnight dexamethasone suppression test (DST) with a cutoff of 1.8 µg/dL for HC screening after known causes of false-positive DSTs were excluded<sup>3,4</sup>
- CATALYST secondary analyses demonstrated a spectrum of cardiometabolic comorbidities as post-DST cortisol increased from <1.2 µg/dL to 1.2–1.8 µg/dL to >1.8 µg/dL<sup>5</sup>
- Here, we performed a similar analysis in MOMENTUM, assessing the occurrence and clinical characteristics of participants with post-DST cortisol levels <1.2 µg/dL, 1.2–1.8 µg/dL, and >1.8 µg/dL

- Distribution of participants across post-DST cortisol subgroups is shown in Figure 2

Figure 2. Post-DST Cortisol Levels in MOMENTUM Participants



DST, dexamethasone suppression test; HC, hypercortisolism.

- Baseline characteristics are shown in Table 1

Table 1. Baseline Demographics and Characteristics Across Post-DST Cortisol Subgroups

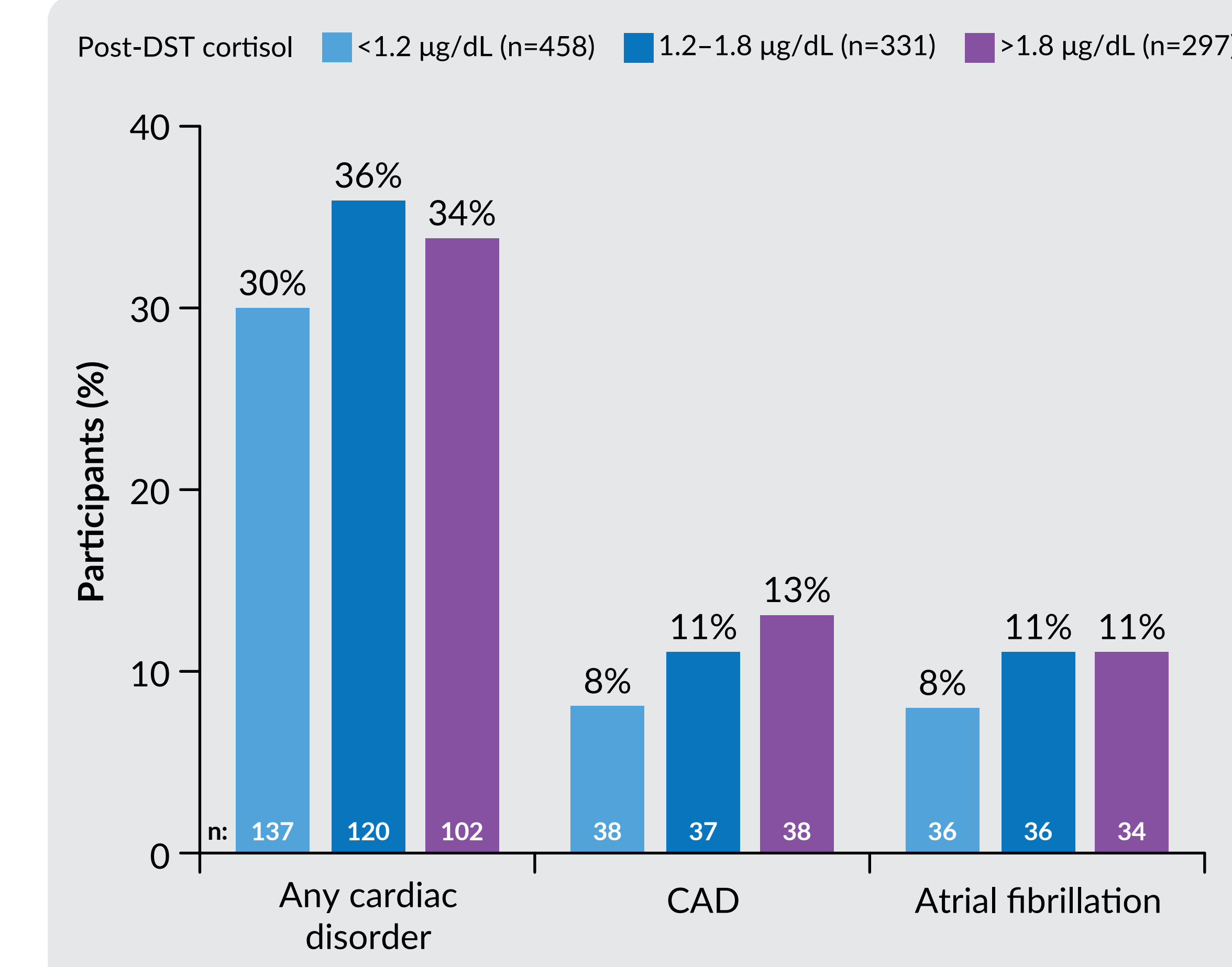
	Post-DST Cortisol Level		
	<1.2 µg/dL (n=458)	1.2–1.8 µg/dL (n=331)	>1.8 µg/dL (HC) (n=297)
Age, y, mean (SD)	63.6 (11.0)	66.9 (10.5)	66.2 (10.2)
Female, n (%)	251 (54.8)	174 (52.6)	130 (43.8)
Race, n (%)			
Asian	11 (2.4)	12 (3.6)	12 (4.0)
Black or African American	158 (34.5)	129 (39.0)	109 (36.7)
White	272 (59.4)	178 (53.8)	170 (57.2)
Other	17 (3.7)	12 (3.6)	6 (2.0)
Ethnicity not Hispanic/Latino, <sup>a</sup> n (%)	327 (71.4)	249 (75.2)	219 (73.7)
BMI, kg/m <sup>2</sup> , mean (SD)	34.1 (7.0)	32.6 (7.1)	32.0 (6.9)
Waist circumference, cm, mean (SD) [n]	109.9 (16.8) [455]	108.4 (17.3) [328]	106.9 (18.0) [294]
SBP, mmHg, mean (SD) [n]	139.9 (16.9) [458]	140.7 (18.2) [331]	141.3 (18.3) [297]
DBP, mmHg, mean (SD) [n]	84.5 (11.8) [458]	83.2 (12.8) [331]	84.4 (13.1) [297]
HbA1c, %, mean (SD) [n]	6.3 (1.3) [456]	6.6 (1.6) [329]	6.6 (1.6) [295]
Post-DST cortisol, µg/dL			
Mean (SD)	0.9 (0.2)	1.5 (0.2)	4.2 (3.5)
Median (range)	0.9 (0.2–1.2)	1.4 (1.2–1.8)	2.7 (1.8–25.1)

<sup>a</sup>Ethnicity not reported or unknown for 1 participant for the <1.2 µg/dL group, 2 participants for the 1.2–1.8 µg/dL group, and 3 participants for the >1.8 µg/dL group. BMI, body mass index; DBP, diastolic blood pressure; DST, dexamethasone suppression test; HbA1c, hemoglobin A1c; HC, hypercortisolism; SBP, systolic blood pressure; SD, standard deviation.

- Higher post-DST cortisol was associated with a trend toward a higher occurrence of any cardiac disorder, including coronary artery disease and atrial fibrillation (Figure 3)
  - The occurrence of heart failure was similar across post-DST groups (4–5% in each)

## RESULTS

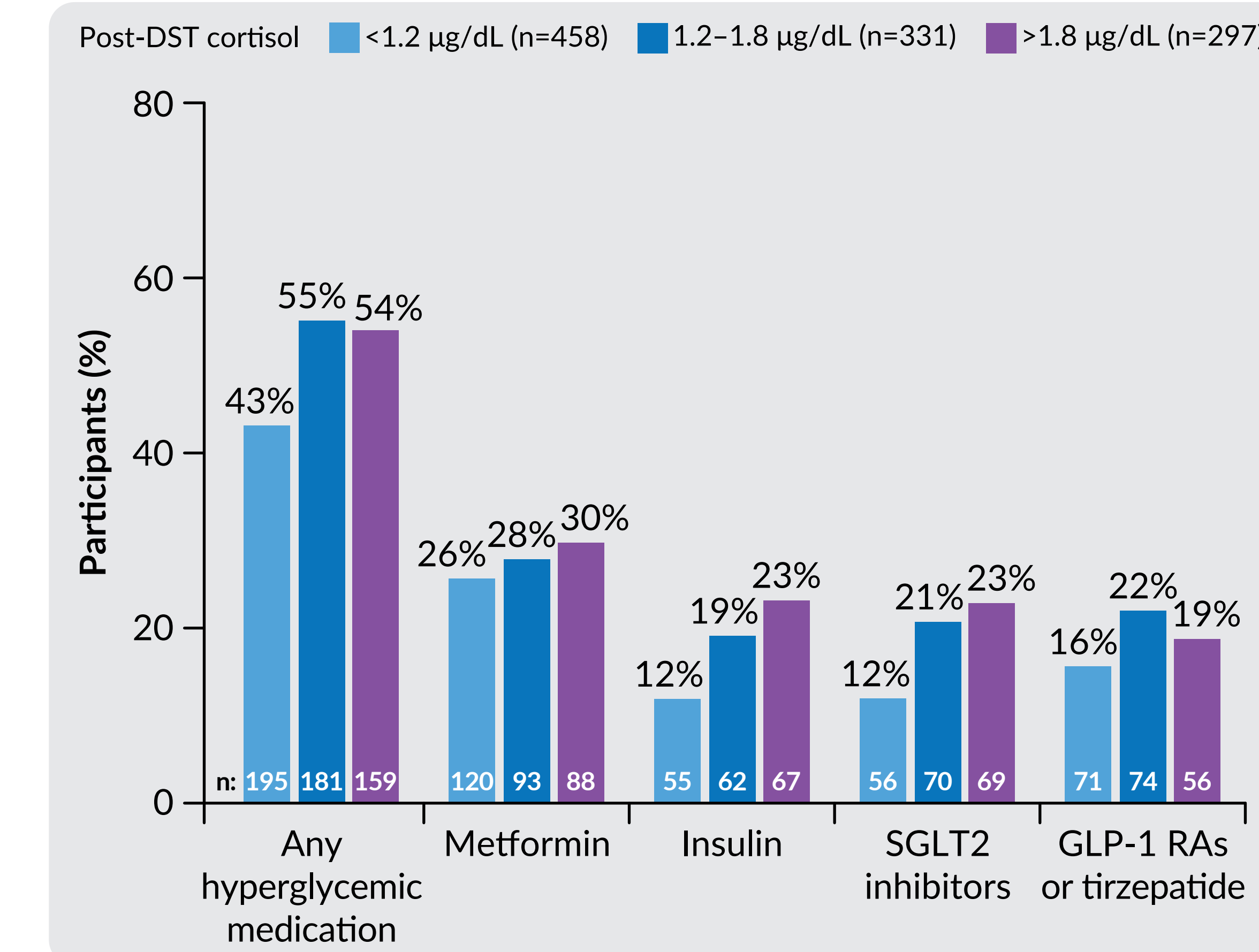
Figure 3. Occurrence of Cardiac Comorbidities Across Post-DST Cortisol Subgroups



CAD, coronary artery disease; DST, dexamethasone suppression test.

- Occurrence of T2D was lower in the post-DST cortisol <1.2 µg/dL subgroup compared with the 1.2–1.8 µg/dL and >1.8 µg/dL subgroups (40%, 53%, 50%, respectively)
- There was also a trend toward increased use of antihyperglycemic medications with increasing post-DST cortisol (Figure 4)

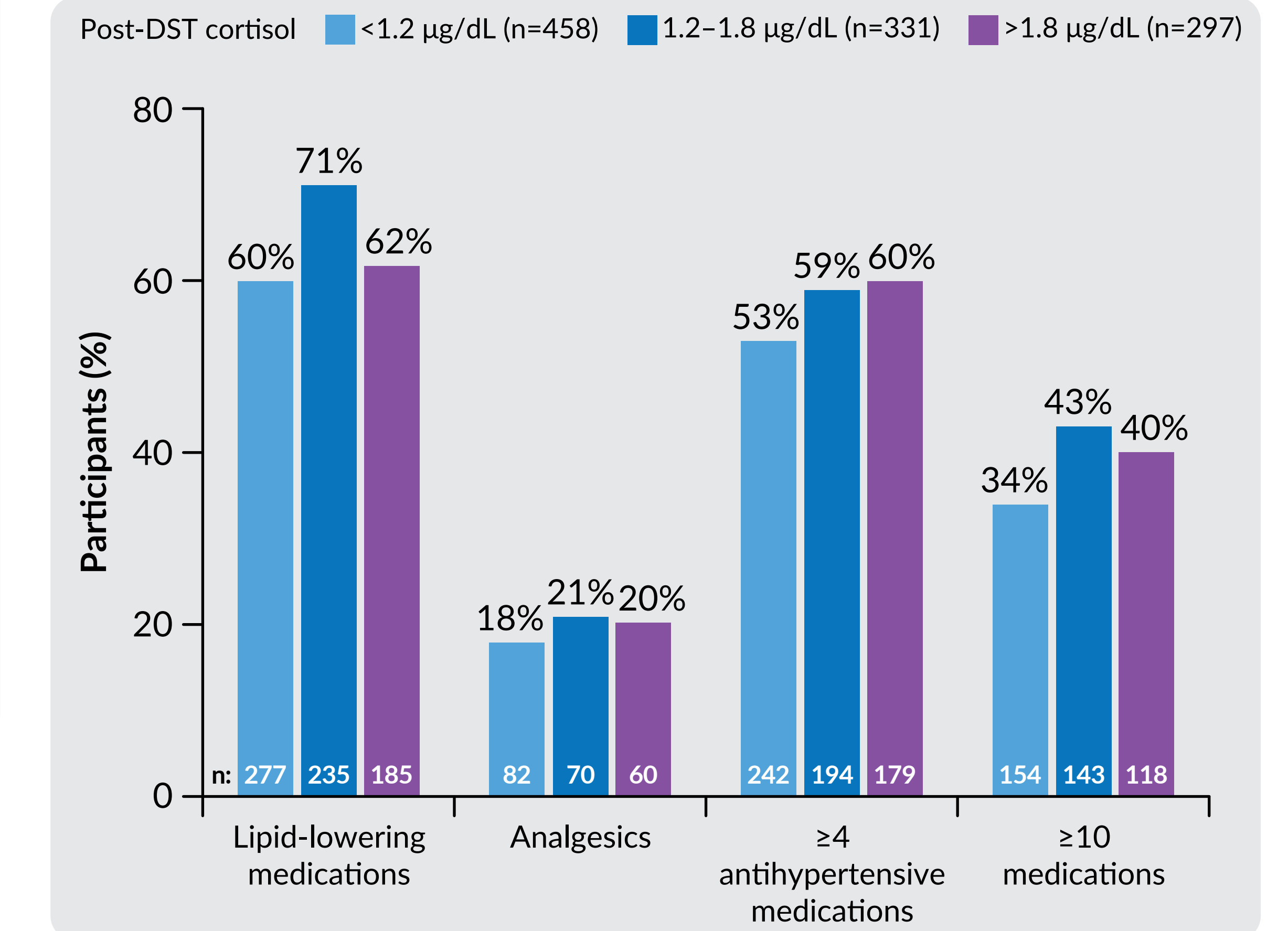
Figure 4. Antihyperglycemic Medication Use Across Post-DST Cortisol Subgroups



DST, dexamethasone suppression test; GLP-1 RA, glucagon-like peptide-1 receptor agonist; SGLT2, sodium-glucose cotransporter 2.

- Higher post-DST cortisol levels were associated with a trend toward increased use of some additional medication classes and with the use of ≥4 antihypertensives and ≥10 total medications (Figure 5)

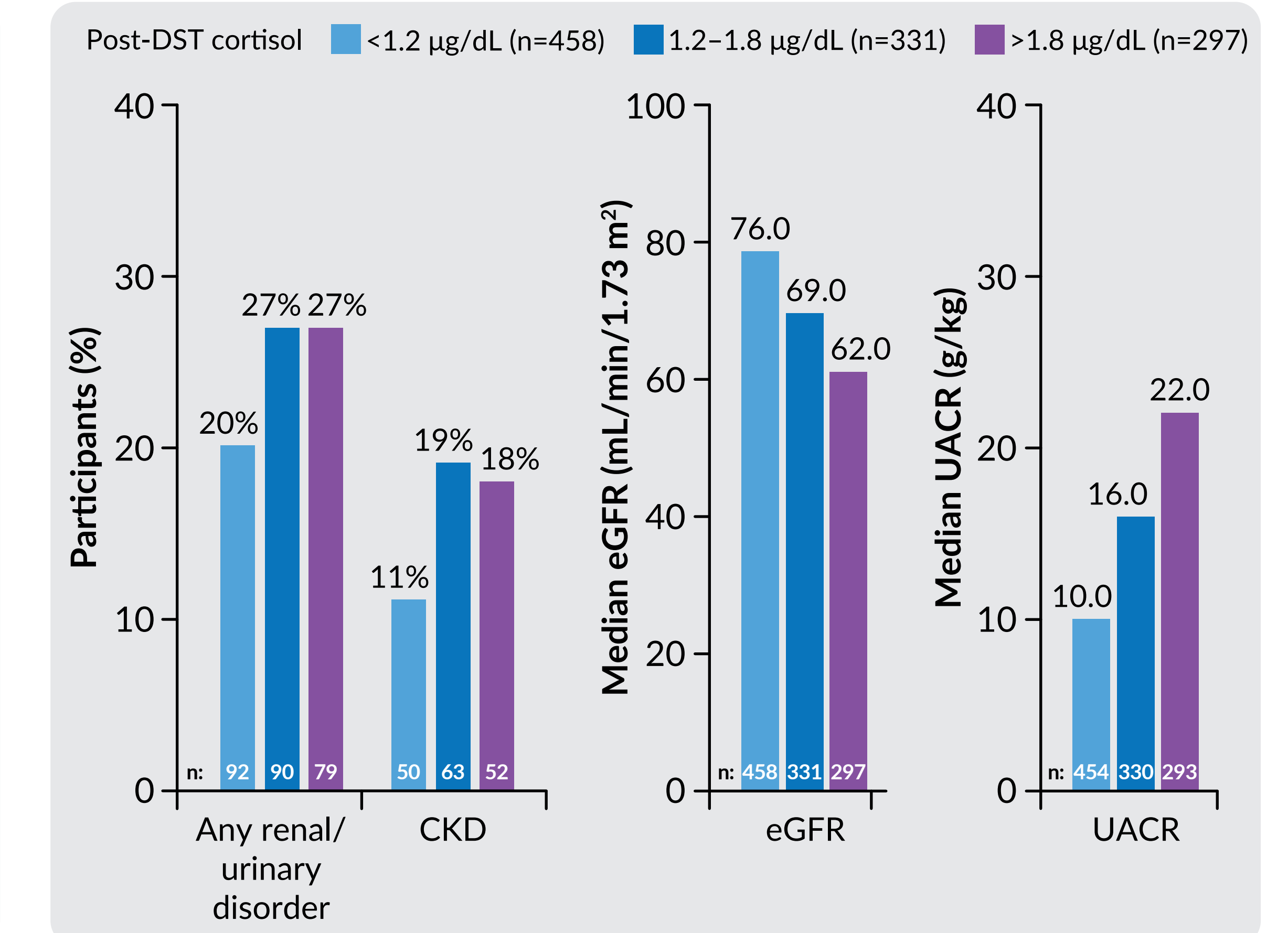
Figure 5. Additional Medication Use Across Post-DST Cortisol Subgroups



DST, dexamethasone suppression test.

- Renal and urinary disorders, such as chronic kidney disease, were also more frequent, and kidney function decreased in participants with higher post-DST cortisol (Figure 6)

Figure 6. Renal Comorbidities and Kidney Function Parameters Across Post-DST Cortisol Subgroups

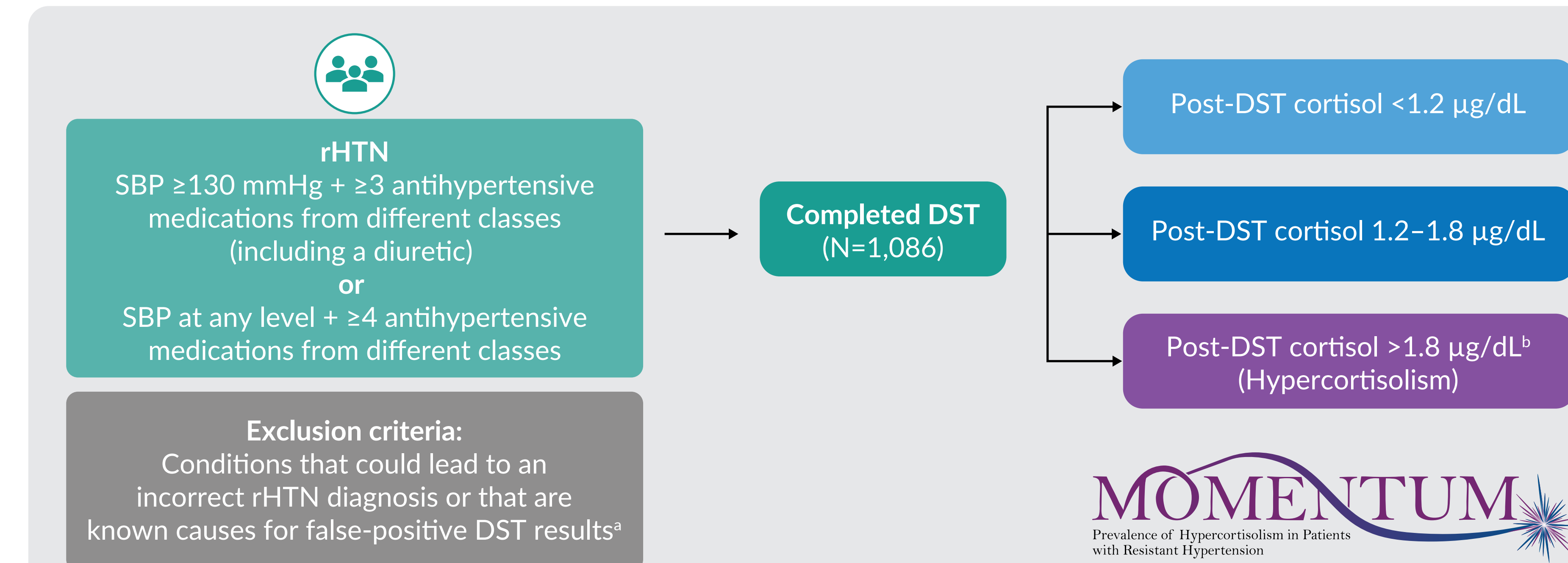


CKD, chronic kidney disease; DST, dexamethasone suppression test; eGFR, estimated glomerular filtration rate; UACR, urine albumin-to-creatinine ratio.

## METHODS

- MOMENTUM is a multicenter observational study that enrolled adults aged ≥18 years with rHTN (Figure 1)

Figure 1. MOMENTUM Post-DST Cortisol Subgroup Analysis



<sup>a</sup>Including white-coat hypertension; nonadherence to antihypertensives; use of oral contraceptive pills; excessive alcohol consumption; severe untreated sleep apnea; severe psychiatric, medical, or surgical illness; night-shift work; and/or hemodialysis/end-stage renal disease.  
<sup>b</sup>With dexamethasone >140 ng/dL.  
DST, dexamethasone suppression test; SBP, systolic blood pressure.

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## Preparer Disclosure

Dr. Bradley Eilerman reports: speaker/consultant for Abbvie, Corcept Therapeutics, Dexcom, Eli Lilly, and Novo Nordisk.

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