OCS Reduction According to the Presence of Nasal Polyps or Atopic Status in the PONENTE Study

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Rationale: Severe asthma is frequently associated with comorbidities. Nasal polyps (NP), in particular, indicate an eosinophilic phenotype and have been shown to predict an enhanced response to benralizumab in terms of asthma exacerbations and lung function. Increased serum immunoglobulin (Ig) E levels and atopy are also common in severe asthma, although they tend not to be associated with increased risk of exacerbations or predict response to biologics. Benralizumab has been shown to decrease long-term oral corticosteroid (OCS) use among patients with severe asthma, but whether the presence of comorbid NP, elevated serum IgE, or the presence of atopy impacts the degree of OCS reduction achieved with benralizumab is unknown.

Methods: An analysis of 598 patients in the multicenter, open-label phase IIIb PONENTE trial was conducted to demonstrate the ability of benralizumab to eliminate or reduce the daily OCS dosage according to the presence of comorbidities before a personalized, variable OCS down-titration was initiated. Endpoints included the proportion of patients eliminating OCS use, the proportion achieving a dosage ≤5 mg if adrenal insufficiency was the cause of stopping the OCS taper, and the proportion achieving a dosage ≤5 mg regardless of the cause of stopping the OCS taper.

Results: At baseline, 20.9% of patients had nasal polyps, the median IgE level was 130.7 (range, 1.5–17840.7) IU/mL, and 47.2% were atopic with positive Phadiatop results to common aeroallergens. More patients without chronic rhinosinusitis (CRS) than with CRS achieved the endpoints. Of patients with CRS, a higher proportion of those with NP than without NP achieved the endpoints. Similar proportions of atopic and non-atopic patients, as well as of patients with different IgE levels, achieved OCS elimination or a daily dosage ≤5 mg. A greater proportion of atopic patients achieved OCS elimination than non-atopic patients, but no difference was observed among patients with different IgE levels (**Table**).

Conclusions: Most patients achieved elimination or lowest possible daily OCS dosage irrespective of baseline atopic status or IgE levels. Among those with CRS, more patients with NP reduced or eliminated OCS than those without NP.

Table. Endpoints according to patient comorbidity subgroups

Endpoint	**Patients eliminating OCS, n (%) (95% CI)**	**Patients achieving daily OCS dosage ≤5 mg if AI was the cause of stopping the taper, n (%) (95% CI)**	**Patients achieving daily OCS dosage ≤5 mg regardless of the cause of stopping the taper, n (%) (95% CI)**	**Patients achieving >0% reduction in OCS dosage, n (%) (95% CI)**
Patient subgroup				
Comorbid CRS with NP (N=178)	103 (57.9) (50.25, 65.21)	141 (79.2) (72.51, 84.92)	162 (91.0) (85.81, 94.77)	152 (85.4) (79.33, 90.23)
Comorbid CRS without NP (N=52)	28 (53.8) (39.47, 67.77)	39 (75.0) (61.05, 85.97)	43 (82.7) (69.67, 91.77)	41 (78.8) (65.30, 88.94)
No comorbid CRS (N=368)	241 (65.5) (60.39, 70.34)	302 (82.1) (77.76, 85.85)	341 (92.7) (89.50, 95.11)	331 (89.9) (86.41, 92.82)
Atopic (Phadiatop positive) (N=278)	184 (66.2) (60.30, 71.73)	225 (80.9) (75.82, 85.38)	254 (91.4) (87.43, 94.39)	250 (89.9) (85.77, 93.20)
Non-atopic (Phadiatop negative) (N=311)	184 (59.2) (53.47, 64.68)	252 (81.0) (76.22, 85.23)	284 (91.3) (87.62, 94.20)	266 (85.5) (81.12, 89.25)
Baseline IgE <Q1 (N=149)	88 (59.1) (50.71, 67.04)	120 (80.5) (73.26, 86.56)	133 (89.3) (83.15, 93.74)	124 (83.2) (76.24, 88.84)
Baseline IgE Q1 to <Q2 (N=149)	97 (65.1) (56.87, 72.72)	120 (80.5) (73.26, 86.56)	138 (92.6) (87.17, 96.26)	132 (88.6) (82.36, 93.21)
Baseline IgE Q2 to <Q3 (N=149)	91 (61.1) (52.75, 68.95)	120 (80.5) (73.26, 86.56)	139 (93.3) (88.00, 96.73)	138 (92.6) (87.17, 96.26)
Baseline IgE ≥Q3 (N=149)	96 (64.4) (56.18, 72.09)	121 (81.2) (74.00, 87.13)	135 (90.6) (84.74, 94.77)	129 (86.6) (80.03, 91.60)

AI=adrenal insufficiency; CI=confidence interval; CRS=chronic rhinosinusitis; IgE=immunoglobulin E; NP=nasal polyps; OCS=oral corticosteroid.

Word count: 340/400 (not including title, authors' information, institutions, tables, images, and spaces between words; 1 table or image/graph maximum is permitted and not included in word count)

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