Long-term laboratory safety from open-label extension study of dupilumab in patients aged 6 months to 5 years with moderate-to-severe atopic dermatitis

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OBJECTIVES

- Systemic treatments often require laboratory monitoring, increasing patient treatment burden
- Here we report 52-week laboratory safety data for dupilumab-treated children aged 6 months to 5 years with moderate-to-severe atopic dermatitis (AD)

METHODS

- LIBERTY AD PED-OLE (NCT02612454) is an open-label extension study of children aged 6 months to <18 years with moderate-to-severe AD
- This interim analysis includes hematologic and chemistry laboratory parameters in children aged 6 months to 5 years treated with dupilumab every 4 weeks (q4w[a]) stratified by weight
  - Baseline weight 5 kg to < 15 kg: 200 mg
  - Baseline weight 15 kg to < 30 kg: 300 mg
- Week 16 data from dupilumab- and placebo-treated children aged 6 months to 5 years with moderate-to-severe AD from LIBERTY AD PRESCHOOL (part B; NCT03346434) are included for comparison
- At the time of this analysis, 180 patients were enrolled on a rolling basis with varying time to completion; 122 (67.8%) completed up to 16 weeks and 30 (16.7%) completed up to 52 weeks

[a]Topical corticosteroids (TCS) were used only in the case of relapse or rescue at the investigator's discretion.

RESULTS

Figure 1. Eosinophil and platelet counts from dupilumab-treated children aged 6 months to 5 years from LIBERTY AD PED-OLE.

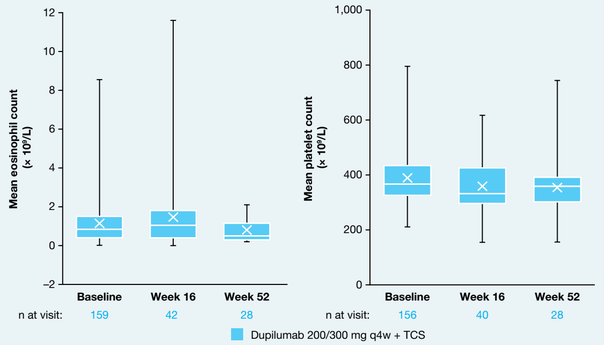
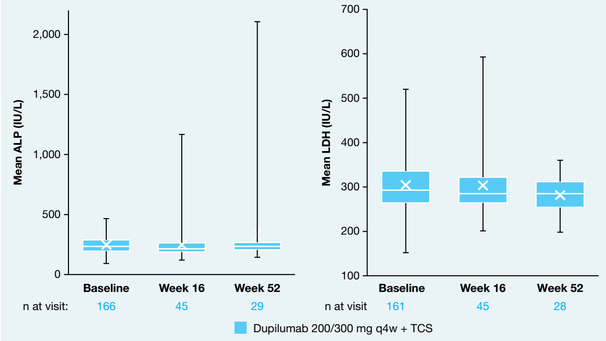


Figure 2. ALP and LDH levels from dupilumab-treated children aged 6 months to 5 years with AD from LIBERTY AD PED-OLE.



ALP, alkaline phosphatase; LDH, lactate dehydrogenase

Safety

- In the dupilumab-treated group in LIBERTY AD PED-OLE, a mild case of anemia (0.6%) and a mild case of thrombocytopenia (0.6%) were reported, which were resolving and resolved, respectively, at the time of this interim analysis
- 2 cases of eosinophilia (2.4%), 1 severe and 1 moderate, and 1 mild case of neutropenia (1.2%) were reported in the dupilumab-treated group in LIBERTY AD PRESCHOOL
- An increase in mean ALP and decrease in mean LDH within the normal range were observed in dupilumab-treated patients
- Overall safety was consistent with the known dupilumab safety profile

Table 1. Hematologic data from dupilumab-treated children aged 6 months to 5 years with moderate-to-severe AD.

		LIBERTY AD PRESCHOOL				LIBERTY AD PED-OLE		
		Placebo + TCS (n = 78)		Dupilumab 200/300 mg q4w + TCS (n = 83)		Dupilumab 200/300 mg q4w + TCS (n = 180)		
Mean (SD)	Normal range	BL	Week 16	BL	Week16	BL	Week 16	Week 52
Eosinophils (x 10^9/L)	0–1.1	1.10 (0.74)	0.96 (0.82)	1.09 (0.73)	1.37 (1.68)	1.15 (1.18)	1.48 (1.91)	0.80 (0.64)
Platelets (x 10^9/L)	163–375	385.6 (112.94)	406.1 (112.12)	397.7 (103.18)	378.6 (95.63)	388.7 (102.51)	359.0 (93.13)	356.1 (107.48)
Hemoglobin (g/L)	105–155	127.2 (11.44)	128.2 (11.19)	129.4 (12.02)	128.4 (10.98)	126.9 (11.13)	124.1 (7.31)	124.8 (8.25)
Leukocytes (x 10^9/L)	5.5–17	10.29 (3.13)	9.80 (3.23)	10.06 (3.14)	9.50 (4.01)	9.76 (3.51)	10.0 (3.35)	8.48 (2.57)
Neutrophils (x 10^9/L)	1.5–10	3.85 (1.725)	3.79 (1.91)	3.54 (1.56)	3.18 (1.94)	3.47 (1.90)	3.58 (1.93)	3.34 (1.91)

Table 2. Chemistry parameters from dupilumab-treated children aged 6 months to 5 years with moderate-to-severe AD.

		LIBERTY AD PRESCHOOL				LIBERTY AD PED-OLE		
		Placebo + TCS (n = 78)		Dupilumab 200/300 mg q4w + TCS (n = 83)		Dupilumab 200/300 mg q4w + TCS (n = 180)		
Mean (SD)	Normal range	BL	Week 16	BL	Week16	BL	Week 16	Week 52
Metabolic function								
Creatine kinase (U/L)	38–281	123.7 (48.39)	130.7 (46.39)	121.3 (57.45)	144.2 (84.8)	142.9 (71.77)	140.9 (74.39)	142.1 (60.24)
Liver chemistry								
ALP (IU/L)	70–370	219.0 (65.49)	233.2 (65.98)	223.3 (58.68)	273.4 (80.01)	246.4 (68.78)	248.4 (152.41)	330.9 (376.62)
LDH (IU/L)	165–450	341.1 (93.9)	317.4 (67.58)	332.9 (72.8)	283.8 (44.74)	304.3 (59.59)	305.2 (76.88)	281.3 (45.00)
Renal chemistry								
Blood urea nitrogen (mmol/L)	0.71–5.7	4.11 (1.47)	4.03 (1.24)	4.14 (1.31)	4.33 (1.25)	4.16 (1.25)	4.15 (1.25)	4.07 (1.55)
Creatinine (µmol/L)	14–41	20.1 (8.04)	21.6 (8.21)	20.0 (8.19)	21.1 (8.56)	20.8 (8.31)	20.3 (9.06)	21.6 (10.36)

CONCLUSIONS

- No clinically meaningful changes in hematologic and chemistry parameters were observed during 52 weeks of dupilumab treatment
- While it remained within normal intervals, an increase in mean ALP was observed in dupilumab-treated patients; this enzyme is associated with bone mineralization or growth[1]
- Although eosinophil counts increased slightly from baseline, they decreased below baseline by Week 52
- Decreases in mean LDH and platelet counts within the normal range were observed in dupilumab-treated patients, consistent with decreased inflammation
- As with adults, adolescents, and older children, routine laboratory monitoring is unnecessary in children aged 6 months to 5 years with moderate-to-severe AD

Reference: 1. Dori N, et al. Pediatr Int. 2010;52:866-71.

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