Study predicts who may benefit from CAR-T cell therapy for blood cancers

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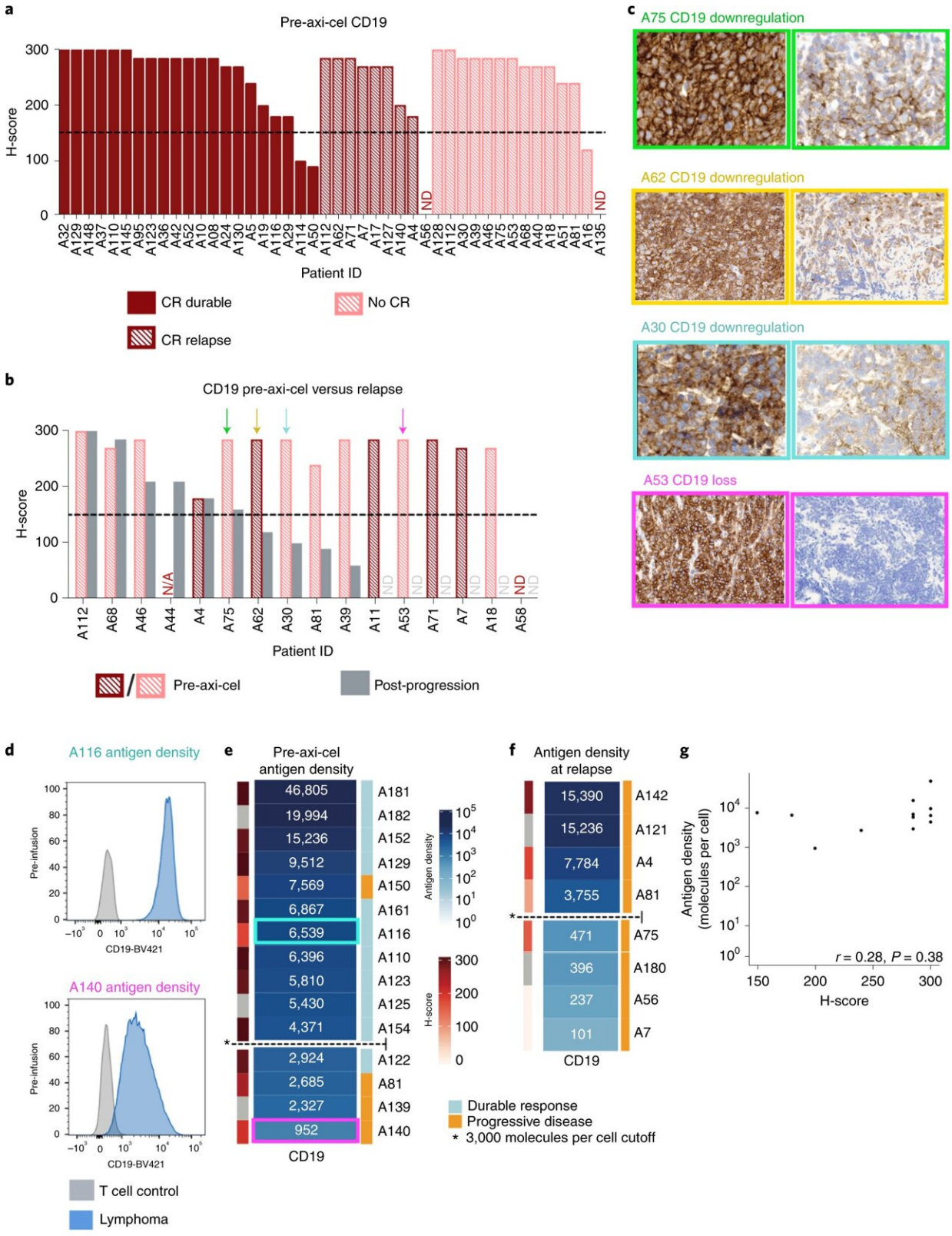

Fig. 1: IHC demonstrates CD19−/lo disease postaxi-cel and quantitative flow

cytometry of LBCL preaxi-cel therapy is associated with disease progression. a, Preaxi-cel H-scores did not distinguish long-term responders and those with progression postaxi-cel (P = 0.32 by t-test, P = 1 Fisher's exact test). Waterfall plot of CD19 IHC H-scores preaxi-cel therapy (n = 44 patients). The H-score was calculated by the percentage of positive tumor cells (0–100) × stain intensity (1–3). The dashed line denotes the H-score of 150, which was used to define antigen positivity. ND, not detectable. b, Paired CD19 H-scores preaxi-cel and at progression show significant differences (P = 0.003 by Wilcoxon signed-rank test). Using an H-score cutoff of 150, and the observed rate of CD19−/lo progression (10 out of 16 patients), the estimated 95% binomial CI (Wilson score) for CD19−/lo progression was 38–82%. N/A, no data point. c, Representative patients with IHC demonstrating decreased CD19 expression at the time of progression (A75, relapse H-score = 160; A62 relapse H-score = 120; A30, relapse H-score = 100; A53, relapse H-score = 0) d, Preaxi-cel site density by quantitative flow cytometry in a patient with ongoing response (A116) compared with a patient who experienced progression (A140) e, Preaxi-cel median CD19 site density by quantitative flow cytometry organized from highest (dark blue) to lowest (white) in 15 patients. Patients with lower site density were more likely to experience disease progression after axi-cel (P = 0.03 by Firth logistic regression). Based on the fit model, 3,000 molecules per cell was defined as the cutoff for CD19 positivity. f, Median site density at the time of axi-cel progression (n = 8). Four patients had a site density