

Most Jacobsen syndrome deletion breakpoints occur distal to FRA11B

Abstract

Recent studies have identified a (CCG)_n repeat in the 5' untranslated region of the CBL2 protooncogene (11q23.3) and have demonstrated that expansion of this repeat causes expression of the folate-sensitive fragile site FRA11B. It has also been demonstrated that FRA11B is the site of breakage in some cases of Jacobsen syndrome (JS) involving terminal deletions of chromosome 11q. We report on 2 patients with JS and a 46,XX,del(11)(q23.3) karyotype. In both cases, microsatellite and fluorescence in situ hybridization analyses indicated that the deletion breakpoint was approximately 1.5-3 Mb telomeric to FRA11B. There was no evidence of expansion of the CBL2 (CCG)_n repeat in the parents of either patient. The deleted chromosome was of paternal origin in both cases, although it was of maternal origin in the cases reported to be caused by FRA11B. These findings and those in previously reported patients suggest that the breakpoint for most 11q deletions in JS patients is telomeric to FRA11B, which raises the possibility that there may be other fragile sites in 11q23.3 in addition to FRA11B. These findings also support previous evidence that there may be a propensity for breakpoints to differ depending on the parental origin of the deleted chromosome.

Michaelis RC, Velagaleti GV, Jones C, Pivnick EK, Phelan MC, Boyd E, Tarleton J, Wilroy RS, Tunnacliffe A, Tharapel AT. Most Jacobsen syndrome deletion breakpoints occur distal to FRA11B. *Am J Med Genet.* 1998 Mar 19;76(3):222-8. PMID: 9508241.