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# 1086 – African ancestry is associated with early breast cancer onset in Brazilian women

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**Introduction:** The incidence and prevalence of breast cancer among young women are reportedly higher in developing nations, such as Brazil. The underlying reasons for this trend are not yet fully understood. This study aimed to investigate the genetic profile associated with early-onset breast cancer in Brazilian women.

**Methods:** A matched case-control study investigating the association of the prevalence of hereditary breast syndromes variants, genetic profile, and ancestry with early-onset breast cancer. 81 breast cancer cases were identified in young women (<40 years old) diagnosed between 2009 and 2019 at Hospital das Clínicas de Ribeirão Preto. A total of 81 controls (≥40 years old) were selected, matched by cancer subtype diagnosed during the same period based on clinical and pathological information retrieved from patients' files. A total of 42 young and 44 control blood samples were identified in the local biobank and genotyping was conducted using Illumina Global Screening Arrays for SNP association and ancestry analyses.

**Results:** 9 pathogenic/likely pathogenic germline variations (rs876659720 and rs80357089 in BRCA1; rs121912664 in TP53 (R337H); rs45494092, rs1057517585 and rs587778587 in PALB2; rs36053993, rs1114167685 and rs121908380 in MUTYH) were identified in 12 patients with a prevalence of 12.8% and 14.9% in case and control groups (OR=1.2, 95%CI 0.3–5.2). Association analysis identified only one significant single-nucleotide polymorphism (SNP) (rs2071498: MKI67). Ancestry analysis identified a significant association between African ancestry and early-onset breast cancer (OR=1.6, 95%CI 1.3–2.6).

**Conclusion:** Although breast cancer in young women in Brazil was not associated with higher frequency of pathogenic variants linked to breast cancer risk, there is an evident association between African ancestry and the early onset of breast cancer.

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