

#2518 CAG repeats of the androgen receptor gene in breast cancer and its association with survival. Yu H¹, Bharaj B², Giai M³, Diamandis EP². (¹LSU Medical Center, Shreveport, LA 71130; ²Mount Sinai Hospital, Toronto, Ontario M5G 1X5; ³University of Turin, Turin, Italy).

Androgen receptor (AR) mediates the action of androgen and the AR gene contains a series of CAG trinucleotides. Studies have shown that the CAG repeats are associated with prostate cancer risk and progression. The role of the CAG repeats in breast cancer remains unknown. In this study, we measured the CAG repeats in breast cancer tissue using a PCR method. Of the 133 patients, 102 were heterozygous and 31 were homozygous. The mean CAG repeats for homozygous women was 21 and for heterozygous women the number was 20 in the short allele and 24 in the long allele. The length of CAG repeats either in one allele or in both alleles was inversely correlated with histological grade ($r = -0.23$ or -0.26 , $p < 0.05$). An association between positive lymph nodes and fewer CAG repeats in both alleles was also suggested ($p = 0.06$). Survival analysis showed that the total number of CAG repeat in both alleles was associated with patient overall survival. With every CAG repeat increase, there was a 6% reduction in the risk of death ($RR = 0.94$, $p = 0.03$). However, the association became no longer significant when clinical and pathological variables were adjusted in the analysis. This change in significance could be due to the reduction of sample size in the multivariate analysis. In summary, the results of our study suggest that longer CAG repeats may be involved in less aggressive cancer and that the CAG repeats may play a role in breast cancer progression.