Objective to investigate the relationship between single nucleotide polymorphisms-19(SNP-19) in calpain-10(CAPN-10) gene and polycystic ovary syndrome(PCOS).Methods 107 PCOS patients(PCOS group) and 111 normal female(control group) from Zhengjiang China were recruited for this case-control study.We used polymerase chain reaction - restriction fragment length polymorphism(PCR-RFLP) to analysis the distribution of CAPN-10 SNP-19,we also determined hormones and biochemical indicators of both group. Glucose tolerance test (OGTT) were improved in PCOS group at the same time.Results (1)The frequency of allele 1 and genotype 1/2 of CAPN-10 SNP-19 were higher in PCOS group. This study also showed significant association of genotype 1/2 with PCOS compared to 1/1 and 2/2(OR=1.9,95%CI=1.1-3.3,P=0.02).(2)There was no significant difference of allele and genotype between PCOS obese group and non-obese group or IR group and non-IR group.Conclusion The SNP-19 in CAPN-10 may contribute to the genetic susceptibility to PCOS.