It was found that antitumor medications independently contribute to positive platelet antibody screening results in patients with primary liver cancer, using regression models to reduce bias. Patients receiving combined anti–tumor drug therapy and peripheral blood cytopenia should have platelet antibody screening as soon as possible for the prevention and management of immune disorders, neoplastic anemia, thrombocytopenia, and ineffective platelet transfusion events during anti–tumor therapy. Notably, it was discovered that the degree of platelet antibody positively correlated with the anemia and thrombocytopenia severity in cases of hepatocellular carcinoma.