Some organ dysfunctions compel dose/schedule modification in chemotherapy. Special cautions are also required in patients with some organ injuries. Renal dysfunction, assessed by creatinine clearance, reduces excretions of some drugs and alters their pharmacokinetics. Plentiful studies have taken advantages of the creatinine clearance as an indicator of renal function to analyze pharmacokinetics of many drugs in patients with renal dysfunction, as the Calvert’s formula being a typical example. Although both metabolism and excretion in liver relate to pharmacokinetics of some drugs, appropriate indicators for these functions have not been fully established. Metabolism of drugs includes activation and inactivation of them, making the problems complex. Hypoalbuminemia essentially causes an increase in the protein-unbound fraction of drugs, resulting in augmented toxicity. Impaired cardiac function, assessed by the left ventricular ejection fraction, may discourage us to deliver chemotherapy with massive hydration. Cardiac supportive therapy, however, may significantly modify the outcomes, making its standardized studies difficult. There are few evidences to support increasing risk of exacerbation of preexisting cardiomyopathy by administrating cardio-toxic agents. Some reports suggest ethnic differences in the relationship between the acute exacerbation of preexisting interstitial lung diseases and some chemotherapeutic agents, with an especial indication of Japanese population being unique even among the Asian ethnicity. Review articles and position papers of good quality on the renal and hepatic problems are available, whereas they are basically based on studies with small patient numbers. The fact that they generally make ostensibly conservative recommendations after reviewing multiple conflicting research results should be emphasized. Chemotherapy for elderly patients requires comprehensive evaluation of these issues together with cognitive function.