Background.
Fluid resuscitation has emerged as a key therapeutic strategy in patients with acute pancreatitis (AP) in the early phase. The basic goal of fluid resuscitation should be to prevent or minimize the local or systemic response to inflammatory markers. However, today there is a lack of consensus regarding the volume, rate, type and end points of fluid replacement. This article is a review of randomized and observational trials of tactical approaches for conducting fluid therapy in the complex treatment of AP. This review focuses on the rationale for fluid replacement, its optimal volume and rate.

Purpose
The systematization and analysis of accumulated evidential base about the influence of late regimes of infusion therapy on the course and consequences of Acute Pancreatitis.

Methods and subjects.
A bibliographic research of data base on the Internet (PubMed/MEDLINE) was undertaken using combinations of the following words as descriptors: fluid therapy and acute pancreatitis, solutions and acute pancreatitis, pancreatic microcirculation, hemoconcentration and acute pancreatitis, and acute pancreatitis. All randomized controlled trials, prospective/retrospective cohort studies, prospective case-control study and case series that assessed the effects of regimens for fluid therapy (non-aggressive versus aggressive fluid resuscitation) in patients with AP in the early phase were selected.

Results.
Eleven studies were included (11,368 patients): two RCTs (randomised controlled trials, 191 patients), two prospective cohort studies (330 patients), five retrospective cohort studies (10,398 patients), one prospective case-control study (64 patients) and one case series (99 patients). The median volume given in the first 24 hours in the aggressive treatment groups was 4.5 L (range, 3.5–5.4 L), whereas the median volume given in the first 24 hours in the nonaggressive groups was 3.5 L (range, 1.7–4.0 L). Four of these studies provide evidence in favor of aggressive fluid resuscitation.

Other studies reported that patients who received non-aggressive fluid resuscitation in the initial 24 hours of treatment experienced lower rates of acute peripancreatic fluid collections, renal failure, respiratory failure, intensive care unit admissions, mortality, abdominal compartment syndrome, sepsis. The only two randomized controlled trials till date have been based on studies conducted by E. Q. Mao et al. (2009, 2010). There was evidence that non-aggressive fluid therapy resulted in lower organ dysfunction (RR 0.69, 95% CI 0.54 to 0.88; one RCT) and lower mortality (RR 0.40, 95% CI 0.22 to 0.72; two RCTs) compared with aggressive fluid resuscitation.

Conclusion.
Fluid therapy is considered an important early intervention in patients with AP, in theory, offering the opportunity to prevent the severity of the disease and improve clinical outcomes. These systematic review have shown an association between aggressive fluid resuscitation and increased organ failure, acute peripancreatic fluid collections, renal failure, respiratory failure, intensive care unit admissions, mortality, abdominal compartment syndrome, sepsis, compared with non-aggressive fluid resuscitation.