Introduction:
Hormones changes in patients with infection and multiple organ dysfunction is a topic that hasn´t been adequately studied. Goal of study: to establish the value of cortisol in patients with infection and multiple organ dysfunction.

Methods:
After approval the ethics committee of the Mogilev Regional Hospital a prospective observational study was performed. The study included 181 patients aged 18 to 87 years. All patients were hospitalized in the Intensive Care Unit with the infection and multiple organ dysfunction. Patients with endocrine diseases and receiving glucocorticoids were excluded. Cortisol levels were measured on admission and during the course of treatment by radioimmunoassay. In Group L (n = 16) patients had a low levels of cortisol, in the M group (n = 96) - normal cortisol, in group H (n = 69) - high cortisol.

Results:
Cortisol level was in L-group 91.9 (8.28, 131.7) nmol / L, in M-group 410.9 (292.8; 504.7) nmol / L, in H-group 934.2 (763, 6; 1495.5) nmol / L. It is found that the mortality was higher in the groups L - 43.8% (p = 0.33) and H - 47.8% (p = 0.03), than in the M-group - 31.3%. The M-group odds ratio equals 2.02 at 95% confidence interval 1.06 - 3.82 when compared with the H-group. In the M-group in survivors patients (n = 36) showed a decrease cortisol with 1281 (1033.8, 1702.5) nmol / L to 912.3 (801.5, 1068.8) nmol / L (p = 0.01). While the no survivors patients (n = 33) showed increase cortisol with 732 (657.1, 749.2) nmol / L to 1491.2 (1000; 1600) nmol / L (p = 0.008).
Thus itself cortisol level is not a marker of mortality. Receiver operating curve analysis for cortisol was performed: area under the curve equals 0.56 at 95% confidence interval of 0.47 - 0.65 (p = 0.19), sensitivity 48.4%, specificity 70.6%.

Conclusion:
In patients with infection and multiple organ dysfunction may be observed disorders in cortisol levels. These disorders require correction to prevent the increased mortality.