

Linda Tang
Lab 3
Peer review

Title: Predictive factors for failure of percutaneous drainage of postoperative abscess after abdominal surgery

In this study, the authors conducted a clinical trial to assess the efficacy of percutaneous drainage on alleviating post-operative abscess after abdominal surgery. Using a sample size of 81 patients who had postoperative abscess and undergone percutaneous drainage, the authors observed successful drainage in 63 patients, but surgical intervention was needed in 18 patients after drainage failure. The authors concluded that percutaneous drainage is a feasible and effective method for treating abdominopelvic abscess and residual collection was the single predictive factor for drainage failure. The authors offered a good description of the software and statistical tests they used as well as provided detailed documentation of p-values and confidence intervals.

One question I had is regarding the conclusion “percutaneous drainage is a feasible & effective method for the treatment of abdominopelvic abscess”. Among the sample of 81 patients, failure was observed in 22% of the patients, which is a significant proportion of the population. In addition, there’s no measure quantifying the severity of the negative outcome, so it’s hard to clearly judge the efficacy of the treatment. Moreover, since the sample size of this study is relatively small, the data at hand might not be sufficient to reach the definitive conclusion. As a recommendation, it’s helpful to replicate this study in a larger population of patients and also provide clear definitions on what criteria must be met for a treatment to be considered effective, and how much improvement it offers from non-intervention. In addition, it might also help to clarify why certain patient only needed 1 drainage, but certain patients needed 2 drainages for treating abscess.

In relation to statistical methods, the authors first performed univariate analysis to identify variables that are potentially predictive of aversive outcomes using a threshold of 0.2. Then, these variables were entered into a multivariate logistic regression and predictive factors were identified using a threshold of 0.05. One potential issue with this approach is the presence of confounding factors. Since treatment outcome is usually determined by a variety of factors (such as age, income, comorbidities), it’s important to control for these factors in both the univariate and multivariate regression analysis. More generally, screening variables one by one may not be the best approach; the relationship between the variable and the outcome usually depends on other variables being in the model and certain interaction effects may be missed. In addition, although certain variables do not achieve statistical significance, they are still factors worth of consideration in the medical field. In addition, for the variables that were not significant, it would also be important to report their test statistics and p-value.

It would be helpful to provide a summary statistics table that offer more information on the sample of patients and assess if they are representative of the overall population.