Letter to the Editor

The Necessity of an Aseptic Environment for the Preparation of Enteral Feeding Solutions in Iranian Hospitals

Dear Editor,

Enteral feeding (EF) was first introduced in the early twentieth century and is nowadays one of the most common nutritional supportive measures for hospital-admitted patients who are unable to eat orally, but their digestive system still can digest and absorb food. In general, EF nutrition solutions are prepared either by commercial formulas or by manually mixing the necessary nutrients. One of the most critical concerns regarding EF solutions is the possibility of microbial contamination that can occur due to high nutrient richness and risk factors that exist for microbial contamination in all stages of preparation, storage, and consumption of these solutions. On the other hand, reports show that microbial contamination of EF solutions can slow down the recovery process of patients, decrease solutions expected nutritional value, and create dangerous conditions for patients, such as pneumonia, sepsis, and nosocomial infections. Accordingly, standards are developed to evaluate the microbial load of EF solutions, and the US Food and Drug Administration standards are the most valid of them.

Studies on microbial contamination of EF solutions in Iran in two intensive care units (ICUs) of university hospitals in Isfahan (the second-largest city of Iran) showed that microbial contamination of handmade solutions prepared in hospital catering was significantly above the acceptable standard levels even immediately after preparation and also after 18 h of their normal storage. These microbial contaminations increased dramatically in proportionate to the time elapsed from the preparation time.[1] However, it is reported that microbial contamination of handmade solutions prepared in the ICUs of Imam Reza and Shohada hospitals in Tabriz (northwest of Iran) comply with the standards, both at the time of preparation and 18 h after storage.[2] In Tabriz hospitals, solutions are prepared in a cleanroom, while in hospitals of Isfahan, the preparation is done in hospital catering which can show the significant role of aseptic environment in preventing contamination of EF solutions.[1,2] Further, studies in the ICUs of Imam Reza and Shohada hospitals in Tabriz and a university hospital in Isfahan reported that commercial formulations also have microbial contamination beyond the standards and even more than handmade solutions immediately after preparation that should be doubted whether commercial products are manufactured and packaged in aseptic conditions.[2,3] Consequently, according to the results of studies and the unreliability of commercial products, it can be hypothesized that preparing handmade solutions in an aseptic environment, preferably cleanroom, is the safest way to prepare solutions, and it can be a preventative factor for the spread of nosocomial infections and diseases with high mortality in hospitals.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

Ali Rismanbaf[1]

[1]Department of Clinical Pharmacy and Pharmacy Practice, School of Pharmacy and Pharmaceutical Sciences, Isfahan University of Medical Sciences, Isfahan, Iran

Address for correspondence:

Dr. Ali Rismanbaf, E-mail: alirismanbaf74@gmail.com

References

1. Jalali M, Sabzghabaee AM, Badri SS, Soltani HA, Maracy MR. Bacterial contamination of hospital-prepared enteral tube feeding formulas in Isfahan, Iran. J Res Med Sci 2009;14:149-56.
2. Mahinkazemi M, Tarighat-Esfanjani A, Safaiyan A. Bacterial contamination and nutritional adequacy of enteral tube feedings in Iran. Progr Nutr 2017;19:283-90.
3. Baniardalan M, Sabzghabaee AM, Jalali M, Badri S. Bacterial safety of commercial and handmade enteral feeds in an Iranian teaching hospital. Int J Prev Med 2014;5:604-10.

Received: 06-01-2020. **Accepted:** 22-01-2020. **Published:** 28-03-2020.

Access this article online	
Quick Response Code:	Website: www.jrpp.net
	DOI: 10.4103/jrpp.JRPP_20_1

How to cite this article: Rismanbaf A. The necessity of an aseptic environment for the preparation of enteral feeding solutions in iranian hospitals. J Res Pharm Pract 2020;9:60.