The purpose of the study was to evaluate the adsorption of filgrastim on infusion sets (comprising infusion bag, line and filter) and to compare the adsorption of the original filgrastim preparation with biosimilar preparations using HPLC” Tange et al (2017).

Abstract:

The purpose of the study was to evaluate the adsorption of filgrastim on infusion sets (comprising infusion bag, line and filter) and to compare the adsorption of the original filgrastim preparation with biosimilar preparations using HPLC. The inhibitory effect of polysorbate 80 on this adsorption was also evaluated. Filgrastim was mixed with isotonic sodium chloride solution or 5% (w/v) glucose solution in the infusion fluid. Filgrastim adsorption on infusion sets was observed with all preparations and with both types of infusion solution.

The adsorption ratio was about 30% in all circumstances. Filgrastim adsorption on all parts of the infusion set (bag, line and filter) was dramatically decreased by the addition of polysorbate 80 solution at concentrations at or over its critical micelle concentration (CMC). The filgrastim adsorption ratio was highest at a solution pH of 5.65, which is the isoelectric point (pl) of filgrastim. This study showed that the degree of filgrastim adsorption on infusion sets is similar for original and biosimilar preparations, but that the addition of polysorbate 80 to the infusion solution at concentrations at or above its CMC is effective in preventing filgrastim adsorption. The addition of a total-vitamin preparation with a polysorbate 80 concentration over its CMC may be an effective way of preventing filgrastim adsorption on infusion sets.

Reference:

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