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Improving injection force of high viscous drugs by a unique, commercially available needle created by using tapered technology

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The biotechnology sector continues to move towards the development of highly concentrated solutions as a way of providing a better response within the human body. There are potential issues of low injectability for high viscosity drugs. Tapered needle technology will be one of the solutions for improving injectability. mAb drug product (Omalizumab) was reconstituted with various volumes of WFI to attain appropriate viscosities of 269.6 cPs. Three needles (29G-24G tapered needles, 29G straight needle and 24G straight needle) were compared using four different viscosities mentioned above. The syringes used in the study were Terumo PLAJECTM 1 mL COP with i-coatingTM stopper. The syringes were filled with 1 mL. The reduction rate of 29G-24G tapered needle at the speed of 6 mL/min of the injection force was 46.2% when compared with the same gauge straight needle of 29G (The result was 65.01 ± 1.43 N). Tapered needle technology reduced the injection force by approximately 46% when compared with same gauge straight needle.

Biography

Mitsuru Takahashi has completed his PhD at the age of 26 years from Tokyo Institute of Technology. He is working for Terumo Corporation for 5 years. He is the Assistant Manager of Technology Development of Global Pharmaceutical Solutions group.

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