Subcutaneous delivery of biotherapeutics has become a valuable alternative to intravenous administration across many disease areas” Bittner et al (2018).

Abstract:

Subcutaneous delivery of biotherapeutics has become a valuable alternative to intravenous administration across many disease areas. Although the pharmacokinetic profiles of subcutaneous and intravenous formulations differ, subcutaneous administration has proven effective, safe, well-tolerated, generally preferred by patients and healthcare providers and to result in reduced drug delivery-related healthcare costs and resource use. The aim of this article is to discuss the differences between subcutaneous and intravenous dosing from both health-economic and scientific perspectives. The article covers different indications, treatment settings, administration volumes, and injection devices. We focus on biotherapeutics in rheumatoid arthritis (RA), immunoglobulin-replacement therapy in primary immunodeficiency (PI), beta interferons in multiple sclerosis (MS), and monoclonal antibodies (mAbs) in oncology. While most subcutaneous biotherapeutics in RA, PI, and MS are self-administered at home, mAbs for oncology are still only approved for administration in a healthcare setting. Beside concerns around the safety of biotherapeutics in oncology, a key challenge for self-administration in this area is that doses and dosing volumes can be comparatively large; however, this difficulty has recently been overcome to some extent by the development of high-concentration solutions, the use of infusion pumps, and the coadministration of the dispersion enhancer hyaluronidase. Furthermore, given the
increasing number of biotherapeutics being considered for combination therapy and the high
dosing complexity associated with these, especially when administered intravenously,
subcutaneous delivery of fixed-dose combinations might be an alternative that will diminish
these burdens on healthcare systems.

Reference:

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