Biological and biosimilar medicines in the UK

Key points:

- A biosimilar is a biological medicine that is similar to, but not identical to, another biological medicine that has already been approved. [1]
- Due to the complex nature of biological medicines, biosimilars require distinct regulatory pathways from those applied to generic medicines.
- The expiry of patents and data protection on the originator biological medicines has led to the approval and marketing of biosimilars in Europe.
- Biosimilars have the potential to make healthcare more affordable by bringing the life-changing benefits of biological medicines to more patients at potentially lower costs.
- All biological medicines, including biosimilars, should be prescribed by brand name, and not by International Nonproprietary Name (INN).
- Automatic substitution is not appropriate for biological medicines, including biosimilars. These must only be substituted under the direct supervision and with the consent of the treating physician.

Biological medicines

The introduction of biological medicines in the early 1980s revolutionised treatment for some life-threatening and rare diseases, such as cancer, diabetes, blood conditions, rheumatoid arthritis, multiple sclerosis and autoimmune disorders. Biological medicines, including biosimilars, are derived or manufactured from a living biological system, and are much larger and more complex than small molecule medicines. Due to their size and complexity, they are far more difficult to manufacture than small molecule medicines and their characteristics are sensitive to the manufacturing process.

Biosimilar medicines

As its name suggests, a biosimilar cannot be an exact copy of its originator biological medicine due to its complex molecular structure and unique manufacturing process. Due to their complex nature, biosimilars require distinct regulatory pathways from those applied to generic medicines. Biosimilars, like all biological medicines, are approved centrally at the European Union (EU) level. Under European guidelines, manufacturers of biosimilars are required to demonstrate that there are no clinically meaningful differences between the biosimilar and originator biological medicine in terms of safety, efficacy and quality.[2] Once authorised, individual Member States are responsible for the prescription, delivery and use of biological medicines, including biosimilars, in their own territories.

Since 2006, over 18 branded biosimilars have been granted marketing authorisations in the EU[3], and the use of these presents challenges for clinical practice that are different to those that relate to conventional generic medicines. The number of biosimilars available in the UK is expected to increase with biosimilars entering a much wider range of therapy areas, including rheumatoid arthritis, oncology and diabetes.

Ensuring patient safety

As for all medicines, once biosimilars are approved, safety is closely monitored through a process called 'pharmacovigilance'. Given the complexity of biological medicines, including biosimilars; products from different manufacturers are similar but not identical. The brand name and batch number of biological medicines, including biosimilars, must therefore be provided to ensure traceability and attribution of an adverse reaction report to the correct biological medicine. It is also recommended by the ABPI and BIA that all biological medicines, including biosimilars, should have distinctive International Non-Proprietary Names (INN) to ensure accurate tracking, reporting and analysis of suspected adverse reactions.

In the UK, the Medicines and Healthcare products Regulatory Agency (MHRA) has issued guidance[4] to ensure effective safety monitoring and tracking in accordance with EU pharmacovigilance legislation that came into force in July 2012.[5] This includes a recommendation to capture brand name and batch number when reporting suspected adverse reactions. The ABPI and BIA recommend that biological medicines should be prescribed by brand name and not by INN.

abpi
Bringing medicines to life
BIA
UK BioIndustry Association

Unlike standard generic medicines, the characteristics of such products [biologics] will not be identical. For this reason, it is very important that safety surveillance is carried out on a brand/product-specific basis. In addition these products may vary from batch-to-batch and so it is important that we receive information on batch number.[4]

MHRA guidance, November 2012

Interchangeability

The medical practice of interchangeability is defined as changing one medicine for another that is expected to achieve the same clinical effect in a given clinical setting in any one patient, on the initiative, or with the agreement of the prescriber.[6]

Pharmacists may be authorised or even required to substitute a generic for the originator medicine with no obligation to inform the physician or patient, this is called automatic substitution. Automatic substitution is the practice of dispensing one medicine instead of another equivalent and interchangeable medicine at the pharmacy level without consulting the prescriber.

Biosimilars are not exact copies of their reference biological medicine; automatic substitution of one biological medicine for another could impact patient safety and make pharmacovigilance more complicated. This is in line with guidance published by the European Medicines Agency (EMA) in 2012, which states that patients should speak to their doctor and pharmacist for questions related to switching from one biological medicine to another.[1] This is echoed in guidance provided by the British National Formulary (BNF) [7] and also supported by the Scottish Medicines Consortium (SMC)[8].

References

1. EMA Q&A on biosimilar medicines (updated September 2102) Available at: http://www.ema.europa.eu/docs/en_GB/document_library/Medicine_QA/2009/12/WC500020062.pdf
2. EMA Guideline on similar biological medicinal products (adopted September 2005, currently being revised) Available at: http://www.ema.europa.eu/docs/en_GB/document_library/Scientific_guideline/2009/09/WC500003517.pdf
3. European public assessment reports for biosimilars authorised in the EU. Available at: http://www.ema.europa.eu/ema/index.jsp?curl=pages%2Fmedicines%2Flanding%2Fepar_search.jsp&murl=menus%2Fmedicines%2Fmedicines.jsp&mid=WC0b01ac058001d124&searchTab=searchByAuthType&alreadyLoaded=true&isNewQuery=true&status=Authorised&status=Withdrawn&status=Suspended&status=Refused&keyword=Enter+keywords&searchType=name&taxonomyPath=&treeNumber=&searchGenericType=biosimilars&genericsKeywordSearch=Submit
4. MHRA Drug Safety Update, November 2012: Reporting suspected adverse drug reactions to vaccines and biological medicines: please provide the brand name and batch number. Available at: http://www.mhra.gov.uk/home/groups/dsu/documents/publication/con207196.pdf
5. The European pharmacovigilance legislation. Available at: http://ec.europa.eu/health/human-use/pharmacovigilance/index_en.htm
6. European Commission. What you need to know about biosimilar medicinal products. Available at: http://ec.europa.eu/enterprise/sectors/healthcare/files/docs/biosimilars_report_en.pdf
7. BNF. General guidance. Available at: http://www.evidence.nhs.uk/formulary/bnf/current/guidance-on-prescribing/general-guidance
8. SMC. Biosimilar Medicines. Available at: https://www.scottishmedicines.org.uk/About_SMC/Policy_Statements/Biosimilar_Medicines

The development of these materials has been funded by the Association of the British Pharmaceutical Industry (ABPI) Biosimilars Group. Members of the group include the BioIndustry Association (BIA), AbbVie, Amgen, Bristol Myers Squibb, MSD, Pfizer, Novartis and Sanofi.