Trastuzumab biosimilars in oncology – data for ABP980 and real-world experience

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Biologics are larger and structurally more complex than chemically synthesized drugs. Whereas the process of producing generics for chemically synthesized drugs is comparably simple, the development and production of a biosimilar is a very complex procedure. The FDA defines biosimilars as follows: A biological product that is highly similar to the reference product notwithstanding minor differences in clinically inactive components and there are no clinically meaningful differences from the reference product in terms of safety, purity, and potency. Challenges in the implementation of biosimilars are the choice of a valid clinical endpoint, the definition of criteria of comparison with the originator drug, the demonstration of a comparable safety profile and the scientific justification for extrapolation to additional indications based on the totality of evidence.

ABP980 has been compared to US and EU trastuzumab reference product (RP) preclinically regarding structure, pharmacodynamics and pharmacokinetics and has demonstrated biosimilarity. The phase 3 equivalence study of ABP 980 versus trastuzumab RP in the neoadjuvant and adjuvant treatment of HER2 positive early breast cancer – the LILAC trial – met ist co-primary endpoints of predefined risk difference (RD) and risk ratio (RR) of tpCR in breast tissue and axillary lymph nodes. The safety profile was also comparable. The primary endpoints and the safety endpoints demonstrated biosimilarity of ABP 980 to trastuzumab RP. Patients were randomized 1:1 für APB980 and trastuzumab RP in the neoadjuvant phase. In the adjuvant phase patients in the trastuzumab RP arm were re-randomized 1:1 for ABP980 and trastuzumab RP resulting in no new safety signals. By this re-randomization the LILAC trial demontrated the feasibilty of switching form trastuzumab RP to ABP980.

Real-World evidence from Germany (and the personal experience of the author) demonstrates that the complete switch to trastuzumab biosimilars is possible without compromises regarding efficacy and safety.