the risk assessment part, relevant human data must be included and discussed, if available. In this context, it is particularly important to point out the differences between man and test animals. One should also not be afraid to discuss—if appropriate—the worst case scenario; that is, risk assessment in the unlikely event that the toxicity or the proliferative effect seen in the test species is relevant for man. A conclusion is not just an opinion, but must be justified so one can attempt extrapolation from experimental animals to humans (311).

9. CONCLUSIONS

This overview is intended to introduce the reader to the science of pathology investigations and illustrate the value of pathology in preclinical development. Pathology provides mechanistic insight into pharmacologic and toxic effects. It also permits the preclinical development scientist to predict potential human outcomes to drug exposure by careful extrapolation from nonhuman studies.

Early microscopic assessment of nonhuman tissues may reveal subtle toxicity and subsequently lead to a timely discontinuation of the development project. Pathology assessments can also reveal potentially serious toxicities that might not become apparent e.g., until long-term clinical trials have been conducted.

In all cases, appropriate pathology support will increase the likelihood of safe drugs proceeding into and through clinical development. It is incumbant upon the preclinical development scientist to utilize pathology expertise early and frequently during the development of a drug candidate.

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One of the authors of this book chapter (RAE) managed this collection at its early stage. With the dissolution of the Institute of Toxicology, the collection passed into the custody of the Preclinical Safety Department of Novartis Pharma AG in Switzerland. Teaching slide sets with 24–30 duplicates of representative selected cases can be obtained for up to 4 weeks