d. Pharmacology review

The Pharmacology Review includes the mechanism of action and dosing levels. The Pharmacology Review summarizes data from all of the clinical studies to date, and identifies whether they were blinded studies, open-label studies (no blinding), studies on healthy volunteers, PK studies, or drug/drug interaction studies. Drug/drug interaction studies encompass experiments that determine how the absorption, distribution, metabolism, or excretion of the study drug is changed by administration of a second drug.

The Pharmacology Review provides comments on each of the sponsor's clinical trials to date, such as "From Study #6, there was no effect of gender on pharmacokinetics," or "Study #7 was not adequate to allow any conclusion," or "The sponsor needs to submit additional PK data, that is, PK data acquired 12 weeks after administering the study drug." The Pharmacology Review also summarizes toxicology data from rodents, dogs, and primates.

e. Approval letter

The Approval Letter issues a license to the sponsor, where the license controls the manufacture and sale of the drug. The Letter includes information on drug stability and on the expiration data. The Letter memorializes additional experiments that need to be conducted by the sponsor, in the post-marketing context, to verify efficacy or safety. These additional experiments are typically required where the sponsor had taken advantage of an accelerated drug review process. The Letter may mention the MedWatch Program, where patients and physicians submit information on adverse events directly to the FDA, and invite the sponsor to participate (enroll) in this program, and to receive the MedWatch forms that are expected to be collected by the FDA.

The above information and quotations were from the FDA's approval documents issued for three different drugs, cetuximab for cancer (107) natalizumab for multiple sclerosis (108) and ribavirin for hepatitis C (109).

The documents available from www.accessdata.fda.gov are of potential use to all medical writers, investigators, and sponsors. These documents provide a practical, real-world view of how the FDA responds to the study design, and to data acquired from the study. It is recommended that medical writers acquire the available documents relating to at least ten of the drugs from this website, and review them as a source of guidance.

[107] United States Food and Drug Administration. Center for Drug Evaluation and Research (CDER). Application No. STN/BLA 125084; Erbitux® (Cetuximab). All of the correspondence documents are incorporated by reference in the approval letter dated February 12, 2004.

[108] United States Food and Drug Administration. Center for Drug Evaluation and Research (CDER). STN:BL 125104/0. Tysabri® (natalizumab). All of the correspondence documents are incorporated by reference in the approval letter dated November 23, 2004.

[109] United States Food and Drug Administration. Center for Drug Evaluation and Research (CDER). IND Application No. 20-903. Combination of Intron® A (interferon alpha-2) and Rebetol® (ribavirin). All of the correspondence documents are incorporated by reference in the approval letter dated June 3, 1998.