angiotensin-converting enzyme (ACE) inhibitors (e.g., Capoten® (Captopril),[25] Vasotec® (Enalapril)[26]) are just a few of the types of treatments currently available to lower blood pressure and keep cardiovascular disease at bay. Revolutionary changes occurred in the prevention of cardiovascular disease with the introduction of HMG-CoA reductase inhibitors, also known as statins.[27] Lipitor® (Atorvastatin),[28] Zocor® (Simvastatin),[29] and a number of related compounds have demonstrated remarkable capacity to lower cholesterol levels, a major risk factor associated with cardiovascular disease (Figure 1.3).[30]

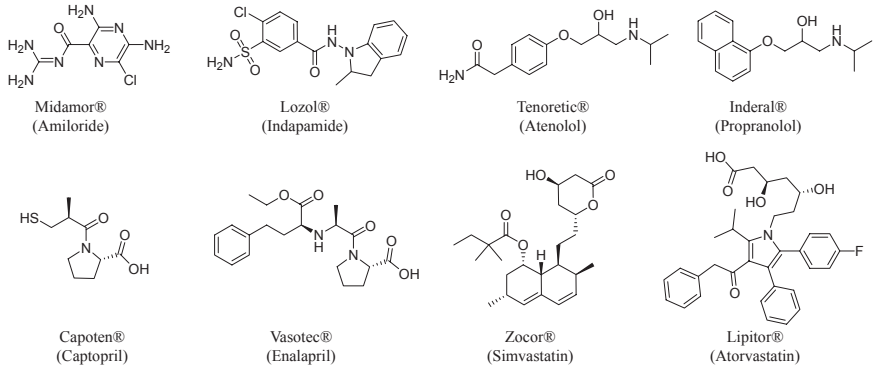

FIGURE 1.3 The diuretics Midamor® (Amiloride) and Lozol® (Indapamide), the β-blockers Tenoretic® (Atenolol) and Inderal® (Propranolol), the ACE inhibitors Capoten® (Captopril), Vasotec® (Enalapril), and the HMG-CoA reductase inhibitors Lipitor® (Atorvastatin) and Zocor®, (Simvastatin) have significantly improved the treatment of cardiovascular disease.

Similar improvements in disease management, symptomatic relief, and improvements in the quality of life through the development of novel chemotherapeutics could be described across a wide range of health issues. It is clear that the treatment of infectious disease, pain management, respiratory disease, and many other conditions has been profoundly and positively impacted by the identification of novel therapies.[31] There are, however, many challenging areas of health care that remain in need of improved medicine and advances in current therapy. Alzheimer's disease, for example, is the most common form of dementia, and was originally described by German psychiatrist and neuropathologist Alois Alzheimer in 1906. Over 100 years later, treatment options for this disease remain limited at best, despite the enormous amount of effort and research funding dedicated to identifying novel treatments. Potential drug targets such as β-secretase (BACE), γ-secretase, glycogen synthase kinase 3β (GSK3β), and cyclin-dependent kinase-5 (CDK5)[32] have been extensively studied, but clinically effective, disease modifying agents have as yet to be identified.