Adverse drug reactions (ADRs) are an area of concern for pharmaceutical drug development. Among these, drug hypersensitivity reactions are neither dose-dependent nor predictable, and affect only predisposed individuals. Clinical and immunological studies suggest that IgE-mediated (type I) and cell-mediated (type-IV) pathogenic mechanisms are involved in many immediate (i.e., occurring within 1 hour after the last drug administration) and non-immediate (i.e., occurring more than 1 hour after the last drug administration) hypersensitivity reactions, respectively. Skin prick, patch, and intradermal tests are the most readily available tools for the evaluation of hypersensitivity drug reactions. The diagnostic value of skin tests for many drugs still has not been fully established. Reliable skin test procedures for the diagnosis of drug hypersensitivity have been defined, and test concentrations have been validated for many drugs. Skin tests should be carried out according to the clinical features of ADRs. In immediate drug reactions, an IgE-mediated mechanism can be demonstrated by a positive skin prick and/or intradermal test after 20 minutes, whereas in non-immediate reactions, a T-cell involvement can be found by a positive patch test and/or a late-reading intradermal test. The predictive value of skin tests varies with the drug tested and is especially high with beta-lactams, muscle relaxants, insulins, platinum salts, streptokinase, and chymopapain. Further diagnostic tests are required in the assessment of drug
hypersensitivity reactions. However, skin tests can provide information about the culprit drug and the mechanism involved in certain reactions. The present review addresses literature data regarding the diagnosis of drug hypersensitivity reactions by skin tests.