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# Characterization of the drug desensitization process in patients at a level IV clinic in Barranquilla, Colombia

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**Abstract:** Adverse drug reactions represent a major clinical and public health concern, with hypersensitivity reactions accounting for up to 20% of cases and associated with potentially life-threatening events such as anaphylaxis. When no therapeutic alternatives exist, drug desensitization becomes a critical strategy, inducing temporary tolerance through progressive dose escalation of the culprit agent. Common targets include acetylsalicylic acid, iodinated contrast media, antibiotics, diuretics, and antituberculosis drugs. This study aimed to characterize the drug desensitization process in patients from a level IV clinic in Barranquilla, Colombia, between 2021 and 2025. An observational, descriptive, and retrospective study was conducted, including all patients undergoing desensitization protocols. Demographic, clinical, pharmacological, and immunological variables were collected, alongside protocol details (drug, monitoring, outcome) and clinical courses (ICU stay, vital signs, adverse events). Descriptive statistics were applied using RStudio. Desensitization was performed in ICU or equivalent units under continuous monitoring by a multidisciplinary team. Protocols were adapted from validated international guidelines or developed de novo when no standardized approach was available. Thirty-one patients underwent desensitization, with a mean age of 58.5 years (range 30–85) and balanced gender distribution. Most had high cardiovascular risk, with hypertension (67.7%), acute coronary syndromes (45.2%), and type II diabetes mellitus (38.7%) as predominant comorbidities. The most frequent hypersensitivity involved nonsteroidal anti-inflammatory drugs and acetylsalicylic acid (58.1%), followed by iodinated contrast media (22.6%). Acetylsalicylic acid was the main target of desensitization (58.1%), particularly in the context of percutaneous coronary interventions, while contrast media accounted for 32.2%. Less common protocols involved furosemide, pyrazinamide, and even saline solution. Cardiac catheterization was the most frequent associated procedure (54.8%). Hemodynamic stability was preserved, with mean blood pressure 137/78 mmHg, heart rate 75 bpm, and oxygen saturation 98.5%. Overall, desensitization was successful in 96.8% of cases; only one patient (3.2%) experienced a mild mucocutaneous reaction, without discontinuation. Protocol implementation increased progressively, reflecting institutional expertise. Drug desensitization in a high-complexity setting proved to be safe and effective, enabling access to essential drugs in patients with confirmed hypersensitivity. The integration of clinical pharmacists was pivotal to ensuring safety, individualized protocol adaptation, and improved outcomes. Prospective studies are needed to consolidate standardized protocols and expand institutional capacity in allergy and immunology.

**Keywords:** Drug hypersensitivity; Desensitization immunologic; Acetylsalicylic acid; Contrast media; immunology.