

## Accuracy and Documentation of Drug Allergies on Ward in a Cardiology Tertiary Care Unit (A Clinical Audit and Re-Audit)

Mohsin Saif, Fahd Ur Rahman, Muhammad Bilal Siddique, Omer Rehman Rana, Sikandar Azam Khan, Shoaib Iqbal Safi, Syed Saif Ullah, Aleena Khan, Ajmal Khan, Daniyal Ahmad Kamal

Armed Forces Institute of Cardiology/National Institute of Heart Diseases (AFIC/NIHD)/National University of Medical Sciences (NUMS) Rawalpindi, Pakistan

### ABSTRACT

**Objective:** To assess whether status of allergies is accurately documented in clinical notes and drug prescription charts in two medical wards in Armed Forces Institute of Cardiology (AFIC) as compared to NICE guidelines.

**Study Design:** We designed a classic audit of measuring current practice against guidelines.

**Place and Duration of Study:** Armed Force Institute of Cardiology/National Institute of Heart Disease (AFIC/NIHD), Rawalpindi Pakistan, from May to Oct 2020.

**Methodology:** Each cycle contained of a two weeks' period in which all new patients admitted in coronary care ward 3 and ward 10 were assessed. A total of 110 patients were assessed in each cycle. Repeat audit cycle was performed after 6 months similarly.

**Results:** In first audit cycle, we assessed 110 patients. The status of allergies for most patients was recorded in clerking proforma (n=103, 93%) but there were deficiencies found in recording of allergies on drug kardex (n=25, 22%). After education and awareness, the second cycle showed that the status of allergies for all patients was recorded in clerking proforma (n=110, 100%) and documentation on drug kardex also improved from 22% to 78%.

**Conclusion:** Repeat audit cycle showed significant improvement in documentation of allergies in clerking proforma and on drug kardex.

**Keywords:** Allergy, Clerking proforma, Drug kardex.

**How to Cite This Article:** Saif M, Rahman F, Siddique MB, Rana OR, Khan SA, Safi SI, Ullah SS, Khan A, Khan A, Kamal DA. Accuracy and Documentation of Drug Allergies on Ward in a Cardiology Tertiary Care Unit (A Clinical Audit and Re-Audit) Pak Armed Forces Med J 2022; 72(Suppl-3): S537-539. Doi: <https://doi.org/10.51253/pafmj.v72iSUPPL-3.9522>

This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<https://creativecommons.org/licenses/by-nc/4.0/>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

### INTRODUCTION

Drug allergies can often result in fatal allergic reactions. The exact incidence of drug allergies is under determined but it is estimated to be 4.2 per 1000 hospitalizations.<sup>1</sup> According to National Patient Safety Agency (NPSA) there have been 3.2% incidents in 2007 where medication was prescribed or dispensed to individuals with known allergies to these medications.<sup>1,2</sup> NICE also recommends guidance for medicine reconciliation.<sup>1</sup> Nursing staff is encouraged to check allergy status of every patient before administering each and every medication.<sup>1</sup> Allergic reactions vary from simple rash to life threatening anaphylaxis. These are exaggerated inflammatory or immunologic response to medication. European network of drug allergies has issued guidance on drug allergy passport and documentation of drug allergies.<sup>1</sup> This emphasis warrants an assessment into local practice of documentation of allergies as compared to NICE guidelines.

**Correspondence:** Dr Fahd Ur Rahman, Department of Adult Cardiology, Armed Forces Institute of Cardiology, National Institute of Heart Diseases (AFIC/NIHD) Rawalpindi Pakistan.

### METHODOLOGY

We designed an audit of assessing current practice against guidelines. The guidelines that were used were;

- Medicines optimisation: the safe and effective use of medicines to enable the best possible outcomes. NICE guideline [NG5] Published: 04 March 2015.
- Drug Allergy: diagnosis and management. Clinical guideline [CG183] Published: 03 September 2014.
- Drug allergy Quality standard [QS97] Published: 30 July 2015.

**Inclusion Criteria:** All new patients being admitted in CCU3 & Ward 10 in AFIC.

**Exclusion Criteria:** There was no exclusion criterion.

Two audits cycles were designed 6 months apart. Each cycle contained of a two weeks' period in which all new patients admitted in coronary care ward 3 and ward 10 were assessed. Cycle contained 110 patients each. Data was collected by reviewing clerking sheets and drug kardex. This was then verified by patients using a questionnaire. Repeat audit cycle was performed after 6 months similarly.

## Drug Allergies on Ward in a Cardiology

### Audit Standards

- All patients admitted in CCU3 & Ward 10 should have documentation of status of allergies in clinical notes.
- All patients admitted in CCU3 & Ward 10 should have documentation of status of allergies on drug kardex.
- Patients were interviewed by the audit team to ascertain the allergies and types of allergic reactions encountered.

Patients with these presentations were included in true allergies;

- Anaphylaxis (Difficulty in breathing, swelling of lips- angioedema)
- Urticaria, extensive rash
- Hypotension, cardiac arrest

### RESULTS

**First Audit Cycle: (May 2020):** Out of 110 patients' data, 103(93%) clinical notes and 25(22%) drug kardexes were assessed in two medical wards in AFIC. There was a good balance of both genders with (n=58; 53%) males and (n=52; 47%) females. Out of n=110 clinical notes documented for allergy status, 33 patients (30%) had allergies, out of which 29(26%) reported to have drug allergies, 4 (3%) reported serious muco-cutaneous reactions including urticaria to latex. Patients reported wide ranges of drugs from which they were allergic to. Amongst others, of note were penicillin (n=13) and paracetamol allergies (n=5) (Table-I).

The status of allergies for most patients was recorded in clerking performa (n=103, 93%) but there were deficiencies found in recording of allergies on drug kardex (n=25, 22%). Factors identified for suboptimal performance were;

- Lack of awareness and importance of documentation of allergies
- Increased paperwork
- Unreliable information from people unaware of name of drug

Power point presentations were arranged for junior doctors and pharmacists post cath conference. Mini flyers were made and distributed throughout the hospital, especially Accident and Emergency from where all patients were clerked. Education of staff including doctors, pharmacists and paramedical staff was ensured.

**Second Audit cycle (October 2020):** Second audit cycle was performed similarly by collecting data of 110

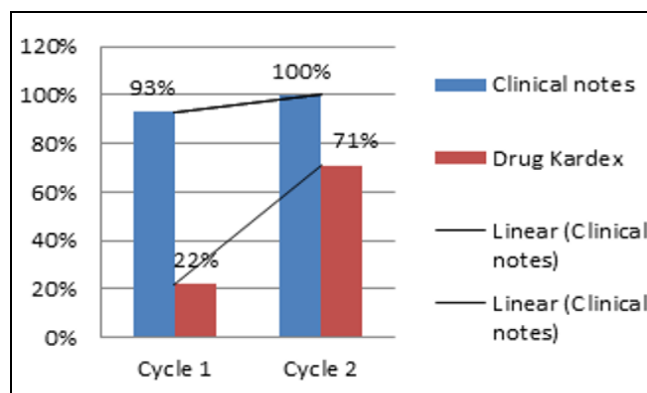
patients after 6 months of first audit cycle. There were (n=53; 48%) males and (n= 57; 52%) females in this data set. Patients in both cycles were demographically similar. The status of allergies for all patients was recorded in clerking proforma (n=110, 100%). Although the documentation on kardex still lacked to meet the standards of guidelines, but a marked improvement was seen from n=25(22%) to n=78 (71%) (Figure).

**Table-I: First Audit Cycle (n=110)**

Record	Allergies Status Documented n(%)	Allergies Status not Documented n(%)
Clinical Notes	103 (93%)	7 (5%)
Drug Kardex	25 (22%)	85 (77%)

**Table-II: Second Audit Cycle (n=110)**

Record	Allergies Status Documented n(%)	Allergies Status not Documented n(%)
Clinical Notes	110 (100%)	0 (0%)
Drug Kardex	78 (71%)	32 (29%)



**Figure: Improvement in drug allergies (Cycle I and Cycle II)**

### DISCUSSION

Drug hypersensitivity reactions include allergic reactions to drugs which are a consequence of enhanced inflammatory or immunologic response.<sup>1</sup> Most common signs and symptoms are due to basophilic and mast cell vasoactive mediators causing rash, urticaria, pruritis, angioedema, wheezing, stridor, hypotension, GI symptoms and anaphylaxis.<sup>1</sup>

We performed the first audit cycle with results showing that the documentation for allergies in clinical notes was 93% and those on drug kardex was 22%. This was well below the 100% standard from NICE and NPSA. However there has been similar audit by Graham *et al.* and other studies which show similar decrease in results of first cycle of audit due to various reasons.<sup>1-3</sup> In second cycle it can be observed that the results markedly improved. Second cycle showed

100% compliance of documentation of allergy status in clinical notes, however, documentation on drug kardex improved from 22% to 77% which was also an improvement.

After speaking to doctors and pharmacists in the hospital, the unreliable information from patients from rural areas was identified as the biggest factor in sub-optimal performance in audit. Patients lack clear documentation of exact drug and exact type of reaction they had from basic health units. This proved to be a hindrance in patients having correct knowledge to begin with. Other factor was awareness amongst doctors and pharmacists to highlight allergies on admission.

### LIMITATIONS OF STUDY

No clinical pharmacist was included as part of audit team.

### CONCLUSION

Our most positive finding was that with some education encouragement and performance in documentation of allergies can be greatly improved.

### RECOMMENDATIONS

1. A designated front page should be provided on drug kardex for allergies and VTE assessment.
2. Education of doctors and paramedical staff regarding importance of documentation of allergies.
3. Daily review of drug kardex by pharmacists.
4. Regular repeat audit cycles should be carried out to make sure adherence to guidelines improves and continues.

### ACKNOWLEDGMENT

I am deeply grateful to my supervisor for his guidance, patience and support who provided insight and expertise that greatly assisted my research project. I also want to share my gratitude for Comdt Exec Dir AFIC/NIHD & HoD R&D for their support and contribution in completion of the research paper.

**Conflict Of Interest:** None.

### Author Contribution

Following authors have made substantial contributions to the manuscript as under:

MS: Intellectual contribution, concept and final approval

FR: Audit design, concept and manuscript writing

MBS: Intellectual contribution, concept & final approval

ORR: Formatting, critical review and data collection/entry

SAK: Analysis, manuscript writing and proof reading

SIS: Data collection, data analysis and review of article

SSU: Data management, data collection and manuscript writing

AK: Data collection, data analysis and review of article

DAK: Review of article, formatting and critical review

Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

### REFERENCES

1. Thong, B.Y-H. and Tan, T.-C. Epidemiology and risk factors for drug allergy. *British Journal of Clinical Pharmacology* 2011; 71(5): 684-700.
2. National Patient Safety Agency. Safety in doses: improving the use of medicines in the NHS 2007, [Internet] available at: [www.nrls.npsa.nhs.uk/resources](http://www.nrls.npsa.nhs.uk/resources) (accessed 3 September 2010).
3. Graham-Clarke, E. and Kalliat, R. (n.d.). An audit of the completeness and accuracy of allergy-status documentation. *The Pharmaceutical Journal*. [Accessed 19 Aug. 2021], [Internet] available at: <https://pharmaceutical-journal.com/article/research/an-audit-of-the-completeness-and-accuracy-of-allergy-status-documentation>
4. [www.nice.org.uk](http://www.nice.org.uk). (n.d.). Technical patient safety solutions for medicines reconciliation on admission of adults to hospital | Guidance | NICE. [internet] Available at: <https://www.nice.org.uk/guidance/psg1> [Accessed 19 Aug. 2021].
5. NMC (2019). Standards for medicines management. [online] [Nmc.org.uk](http://www.nmc.org.uk) [internet] Available at: <https://www.nmc.org.uk/standards/standards-for-postregistration/standards-for-medicines-management/>.
6. Brockow K, Aberer W, Atanaskovic-Markovic M, Baybek SE, Bircher A, Bilo B, Blanca M, Bonadonna P, Burbach G, Calogiuri G, Caruso C. Drug allergy passport and other documentation for patients with drug hypersensitivity—an ENDA/EAACI Drug Allergy Interest Group Position Paper. *Allergy* 2016; 71(11): 1533-1539.
7. Pichler WJ. Drug hypersensitivity: classification and clinical features. *UpToDate*. Waltham (MA): UpToDate Inc. 2019; 1; 126.
8. Samel AD, Chu CY, Robert P, Dellavalle RP, Mockenhaupt M, Roujeau JC, et al. Drug eruptions. *UpToDate*. Waltham, MA. 2013; 2: 9783030671235, 3030671232
9. Harig A, Rybarczyk A, Benedetti A. Clarification of drug allergy information using a standardized drug allergy questionnaire and interview. *Pharmacy and Therapeutics* 2018; 43(8): 480.
10. Husband A, Lloyd C, Worsley AJ, Skelly DM. An audit of drug allergy documentation in a district general hospital. *International J pharmacy practice* 2007; 15(S2): B73-B76.