

A descriptive, observational study of drug allergy system in a public hospital



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Introduction

Allergy is an immunologic mechanism mediated hypersensitivity reaction. Consequences can be severe and life threatening, such as angioedema, drug anaphylaxis, Stevens-Johnson Syndrome. A good documentation of drug allergy profile would be important for health care professionals to provide pharmaceutical care. However, there were only limited data on prevalence of drug allergy in local settings, and limited studies on documentation of drug allergy.

- Study prevalence of drug allergy in a public hospital
- Analyze documentation of drug allergy records.

Purpose of the Project

Method

Drug allergy records were extracted from hospital computer system, including patients visiting pharmacy in a public hospital in Hong Kong. Prescriptions were computer generated, dispensed during 1 Feb – 14 Feb 2009, and patients were over 18 years old.

Results

- 8733 patients satisfied inclusion criteria, with M:F ratio = 44.2:55.8. Average age of male and female were 57.09 and 54.32 respectively. (Table 1, Chart 1)
- Prevalence of drug allergy were 11.98% (1046/8733). Most patients (n = 776, 74%) have 1 drug allergy only. Phenoxymethylpenicillin (Penicillin V) was the most frequent drug allergen. 7 of top 20 drug allergens were penicillins. Penicillins and NSAIDs were the most frequent drug allergen groups. (Chart 2, Chart 3)
- “Rash” (45.49%), “Urticaria” (14.71%) and “Manifestation Uncertain” (19.8%) were the most common clinical manifestations of drug allergy. sub-analysis of penicillin allergy, similar results were obtained. In sub-analysis of NSAIDs, angioedema were more common than urticaria, being top 3 manifestations. A number of descriptions have similar meanings but without detail guideline to distinguish. (Table 2)
- In analysis of conversion of drug allergy record to standard format, conversion rate = 75.05% (1107/1475). Among those unconverted records, they were mainly a) Not drug allergy, e.g. seafood, peanuts, eggs, and b) Unable to convert, e.g. wrong spelling, unknown brand names.
- For drug alerts on drug allergy checking during prescribing, drug alerts were captured in 68 patients (0.78% of total patients). 48.5% alerts were overridden. The most frequent alert pairs involved NSAIDs, aspirin, salicylate containing products (43.81%) (Table 3, Table 4).

Table 1
Sex and age distribution

Age	Male	Female	Total
<20	46	53	99
20-29	360	535	895
30-39	379	638	1017
40-49	554	824	1378
50-59	662	947	1609
60-69	658	625	1283
70-79	744	644	1388
80-89	392	455	847
>90	66	151	217
			8733

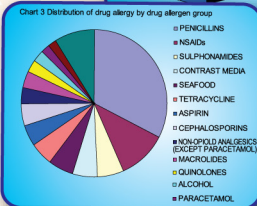
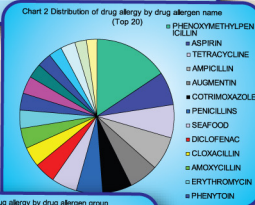
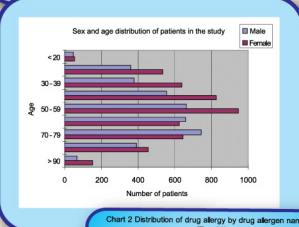


Table 2 Distribution of drug allergy record by Clinical Manifestation

Clinical Manifestation	Number of records	% of total
Rash	571	45.49%
Manifestation uncertain	292	19.80%
Urticaria	217	14.71%
Others	122	8.27%
Angioedema	90	6.10%
Eczema	22	1.49%
Pruritis	22	1.49%
Allergic contact dermatitis	18	1.22%
Asthma	9	0.61%
Stevens-Johnson Syndrome	5	0.34%
Anaphylaxis	3	0.20%
Photosensitivity	3	0.20%
Allergic rhinitis	1	0.07%
Total	1475	

Table 3 Reasons for overriding drug alerts

Overriding reason	Count
Patient is taking this drug without allergic response	43
Patient can tolerate the adverse drug reaction without any problem	4
No other alternative available	2
Others	2
Total	51

Table 4 Drug allergen/Prescribing drug pairs causing allergy alert

Allergen/drug involved	Count	% of total
NSAIDs, Aspirin, Salicylate containing external product	46	43.81%
Penicillins, Cephalosporins	9	8.57%
Paracetamol, paracetamol containing medications	7	6.67%
Others	43	40.95%
Total	105	

Conclusions

Prevalence of drug allergy and most common drug allergen was investigated in study hospital. Certain parameters of drug allergy records in computer system were investigated. A good progress on standardized drug allergy formats to facilitate computerized checking was found. Some cross sensitivities of drug allergy may not be well known.