

Supplementary Materials: Hospitalisation Resulting from Medicine-Related Problems in Adult Patients with Cardiovascular Diseases and Diabetes in the United Kingdom and Saudi Arabia

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Table S1. Characteristics of MRPs ($n = 103$) encountered in the UK study.

Patient Number	Type	Severity	MRP	N	Medicine Involved	Cause of Admission
1	P	Moderate	Chest pain, nausea and vomiting, sweating, Hyperkalaemia, continuous cough	1	ACEI (lisinopril 10 mg)	Yes
2	P	Low	Chest pain (due to unregulated dose, troponin level was too high)	1	Aspirin 75 mg	Yes
3	D	Moderate	High blood sugar level	1	Novomix 30 (short acting insulin)	Yes
4	D	Moderate	High blood sugar level, vomiting	1	Humulin M3 (Intermediate and long acting insulin)	Yes
5	D	Moderate	Hyperglycaemia Cough	2	Olanzapine 5 mg Ramipril 1.25 mg	No
6	D	Moderate	Uncontrolled blood pressure, Headache, palpitation	1	Telmisartan 80 mg Doxazosin 8 mg	No
7	P	Moderate	Continuous high blood pressure, rising troponin level due to medication cardiotoxicity	2	Amlodipine 10 mg Clopidogrel 75 mg Aspirin 75 mg (?)	No
8	P	Low	Hyperglycaemia	1	Lantus insulin 26U	No
9	P	Low	High BM	1	Lantus insulin 26U SC Novorapid SC	Yes
10	D	Moderate	Polyurea and polydipsia, ketoacidosis	1	Metformin 1 g Novorapid 4–8 u/day and 10–15 u at lunch or dinner Lantus 28 u at evening	Yes
11	P	Low	drowsiness, fall and head injury, confusion, dehydration and tachycardia	1	methadone 50 mL dihydrocodeine 30 mg	Yes
12	D	Moderate	Hyperglycaemia	1	Gliclazide 80 mg	Yes
13	p	Low	Near syncope, hypertension	1	Doxazosin 8 mg Amlodipine 10 mg Atorvastatin 80 mg Ramipril 10 mg	Yes
14	D	Moderate	Hypertension, headache, dizziness	1	Temisartan 40 mg	Yes
15	D	Moderate	Angina, chest pain at rest, heavy ache down the left arm, tightness of jaw, nausea and vomiting	1	Nitrglycerine Isosorbide mononitrate	Yes
16	D	Moderate	Chest pain troponin negative	1	Isosorbide mononitrate	Yes

Table S1. Cont.

Patient Number	Type	Severity	MRP	N	Medicine Involved	Cause of Admission
17	P	Moderate	Mild chest discomfort and exertion, Troponin level high	1	Aspirin 75 mg	Yes
18	P	Low	Chest pain, troponin level low	1	Nitroglycerine	Yes
19	D	Moderate	Melena	1	Aspirin 75 mg	Yes
20	D	Severe	PR bleeding and abdominal pain	1	Methotrexate 12.5 mg	Yes
21	D	Severe	Melena	1	Aspirin 75 mg Clopidogrel 75 mg	Yes
22	D	Moderate	Deranged liver function test	1	Atorvastatin 40 mg	No
23	D	Moderate	Hypotension	1	Furosemide 40 mg Ramipril 2.5 mg Spironolactone 25 mg	Yes
24	D	Severe	Bleeding Confusion (potential) Antibiotic resistance (potential) Hypotension	4	Warfarin 3 mg/4 mg Ferrous fumarate Digoxin 62.5 mg Quinine sulfate 300 mg Furosemide 40 mg Amlodipine 5 mg Spironolactone 25 mg	No
25	D	Low	Melena	1	Aspirin 75 mg	No
26	D	Low	Anaemia, chronic kidney disease, fluid overload which resulted in pulmonary oedema	2	Ferrous fumarate Furosemide	Yes
27	D	Low	Hypercalcemia	1	Calcium	No
28	D	Moderate	SOB, palpitation, abnormal PTINR	2	Bisoprolol 5 mg Warfarin 12 mg	Yes
29	P	Low	Cough	1	Simvastatin 40 mg	Yes
30	D	Severe	Haemoptysis	1	Warfarin	Yes
31	D	Moderate	Palpitations	1	Amlodipine 5 mg	Yes
32	D	Moderate	Ankle swelling	1	Amlodipine 10 mg	Yes
33	P	Low	Oedema	1	Furosemide 20 mg	Yes
34	D	Moderate	SOB	1	Digoxin	Yes
35	D	Moderate	Hypoglycaemia	1	Insulin	Yes
36	D	Moderate	High blood pressure Hyperglycaemia Diarrhoea	3	Candesartan 4 mg Insulin Amoxicillin	Yes
37	D	Moderate	High BM Glycosuria	2	Metformin 850 mg Gliclazide 160 mg Pioglitazone 45 mg	Yes

Table S1. Cont.

Patient Number	Type	Severity	MRP	N	Medicine Involved	Cause of Admission
38	D	Moderate	Glycosuria	1	Gliclazide 160 mg Metformine 1 g Humulin mix 25	Yes
39	D	Moderate	Hyperglycaemia	1	Metformin 500 mg	Yes
40	D	Moderate	Hyperglycaemia	1	Insulatard	Yes
41	D	Moderate	Hyperglycaemia	1	Glimipiride	Yes
42	P	Moderate	Renal failure	1	Spirolactone	Yes
43	D	Moderate	OR bleeding due to aspirin	1	Aspirin	Yes
44	D	Moderate	GORD	1	Aspirin	Yes
45	D	Moderate	Chest pain, SOB	2	Aspirin GTN	Yes
46	D	Moderate	Sinus bradycardia	1	Bisoprolol	Yes
47	p	Moderate	SOB, palpitation, abnormal PTINR	1	Aspirin	Yes
48	D	Low	worsening heart failure	1	Furosemide 40 mg Ramipril 1.25 mg	Yes
49	P	Moderate	Angina	1	Asasantin retard	Yes
50	D	Moderate	Impaired kidney function	1	Ramipril	Yes
51	D	Moderate	Hypoglycaemia	1	Gliclazide 80 mg	Yes
52	D	Moderate	Gastroenteritis	1	Aspirin 75 mg Prednisolone 5 mg	Yes
53	P	Moderate	Stroke	1	Aspirin 75 mg	Yes
54	D	Severe	SOB, chest pain, sweating	1	Disopyramide 300 mg	Yes
55	D	Moderate	aortic stenosis contraindication/ risk of hypotension	1	Isosorbide mononitrate	No
56	P	Moderate	palpitation atrial fibrillation	1	Losartan potassium 100 mg	Yes
57	D	Moderate	NSTEMI HF	2	Atorvastatin 20 mg Ramipril 1.25 mg	Yes
58	D	Moderate	SOB in asthmatic patient Low systolic BP	2	Propranolol 20 mg Indapamide 2.5 mg Nifedipine 40 mg Moxonidine 30 mg	Yes
59	D	Low	Diarrhoea	1	Tiotropium 18 mcg Aminophylline 450 mg Salbutamol	Yes

Table S1. Cont.

Patient Number	Type	Severity	MRP	N	Medicine Involved	Cause of Admission
60	D	Moderate	Syncope	1	Glyceryl trinitrate	Yes
61	P	Severe	SOB on exertion associated with chest pain	1	Patient stopped taking his medication	Yes
62	P, D	Moderate	ACS Bradycardia	2	Ticagrelor 90 mg Bisoprolol 1.25 mg	Yes
63	P	low	ALP (Liver function tests) Eye sight loss	2	Ezetimibe 10 mg Ramipril 2.5 mg Sotalol 40 mg	Yes
64	P	low	Chest pain	1	Bisoprolol 1.25 mg Atorvastatin 80 mg Ramipril 1.25 mg	Yes
65	D	low	Kidney function (low creatinine)	1	Ramipril 1.25 mg	No
66	P	low	Chest pain	1	Simvastatin 40 mg Lisinopril 10 mg	Yes
67	P	low	Chest pain	1	Simvastatin 40 mg Ramipril 7.5 mg	Yes
68	P	low	Chest pain	1	Simvastatin 40 mg Ramipril 2.5 mg	Yes
69	P	low	Bleeding ulcer	1	Aspirin 75 mg Ferrous fumarate 305 mg	No
70	P,P,D	Moderate	Increased INR Diarrhoea Nausea, dizziness and weakness	3	Warfarin Antibiotic Warfarin and bisoprolol 1.25 mg	Yes
71	D	low	Right leg swelling	1	Hydrocortisone	Yes
72	D	Moderate	Pulmonary embolism	1	Warfarin 8.5 mg	Yes
73	D	Moderate	Pulmonary embolism	1	Warfarin 8.5 mg	Yes
74	D	Low	Hallucination	1	Madopar 62.5 mg	No
75	P	low	Tightness of chest and tachycardia	1	Glyceryl trinitrate	Yes
76	P	low	Tachycardia	1	Salbutamol TT	Yes
77	P	low	Dizziness and low blood pressure	1	Bisoprolol 10 mg	Yes
78	D	low	Sinus rhythm	1	Digoxin	Yes
79	D	low	Tachycardia	1	Sotalol 80 mg	Yes
80	D	low	Tachycardia	1	Sotalol 80 mg	Yes
81	D	low	Hypoglycaemia	1	Dexamethasone	Yes
82	D	low	Hypotension	1	Atenolol 50 mg	No
83	D	low	Palpitation	1	Lercandipine 10 mg	Yes

Table S1. Cont.

Patient Number	Type	Severity	MRP	N	Medicine Involved	Cause of Admission
84	D	low	Palpitation	1	Doxazosin 4 mg Amlodipine 5 mg	Yes
85	D	low	Palpitation	1	Propafenone 150 mg	Yes
86	D	low	Palpitation	1	Digoxin 125 mcg Bisoprolol 7.5 mg	Yes

Table S2. Characteristics of MRPs encountered in the SA study.

Patient Number	Type	Severity	MRP	N	Medicine	Cause of Admission
1	D	L	Hyperglycaemia	2	Lisinopril 10 mg	Yes
	D	L	High blood pressure		Lercanidipine 20 mg Simvastatin 40 mg	Yes
2	P	L	Hyperglycaemia	2	Insulin mix	Yes
	P	L	Hyperglycaemia		Metformine 500 mg	Yes
3	P	S	Acute coronary syndrome	1	Simvastatin 20 mg	Yes
4	D	S	Hyperglycaemia	1	Humulin M3	Yes
5	P	L	Hyperglycaemia	1	Missing medicine	No
9	P	L	Hyperglycaemia	2	Novomix 30	No
	P	L	HTN		Amlodipine 10 mg Bisoprolol 1.25 mg Ramipril 10 mg	No
10	P	L	Hyperglycaemia	1	Metformin 500 mg	No
11	P	L	Hyperglycaemia	1	Insulin mix	No
12	P	L	Hyperglycaemia	1	Metformin 1 g	No
					Insulin rapid	
13	D	L	Hyperglycaemia	1	Insulin rapid	Yes
14	D	S	Gastric bleeding	1	Aspirin 81 mg	Yes
15	P	L	Hyperglycaemia	1	Humalog mix 50:40 units	No
					Metformin 2 g	
16	P	L	Hyperglycaemia	1	Insulin mix	No
17	P	L	Hyperglycaemia	1	Insulin mix	No
					Metformin 500 mg	
18	P	L	Anaemia	1	Iron	No
19	D	L	Cough	1	Lisinopril 10 mg	Yes

Table S2. Cont.

Patient Number	Type	Severity	MRP	N	Medicine	Cause of Admission
20	D	S	Sweating, nausea and vomiting increasing in intensity	1	Levothyroxine 50 micrograms	Yes
21	D	L	HTN	1	Bisoprolol 1.25 mg	Yes
22	D	M	Hyperglycaemia	1	Glibenclamide 5 mg	Yes
23	P	L	HTN	1	Bisoprolol 5 mg	No
24	D	L	Hyperglycaemia	1	Insulin rapid	Yes
25	D	L	Cough	1	Lisinopril 10 mg	Yes
26	P	L	HTN	1	Bisoprolol 7.5 mg Furosemide 80 mg	No
27	D	L	Epigastric pain	1	Aspirin 75 mg	Yes
28	D	M	Anaemia no iron intake	2	Iron	Yes
	D	M	Hyperglycaemia		Glibenclamide 5 mg	Yes
29	D	L	Hyperglycaemia	1	Novomix 30:14 units	Yes
30	D	L	Cough	1	Simvastatin 40 mg	No
31	D	M	Tachycardia	1	Thyroid hormone	Yes
32	P	L	Tachycardia	1	Levothyroxin 100 mcg	Yes
33	D	No harm	Hyperlipidaemia anaemia	2	Simvastatin 20 mg	No
	D	No harm			Missing medicine	No
34	D	L	Hyperglycaemia	2	Insulatard	Yes
	P	S	Epigastric pain		Clopidogrel 75 mg	No
35	D	L	Infection	2	Augmentin 500 mg	Yes
	D	M	hyperglycaemia		Metformin 500 mg	No
36	D	L	Hyperglycaemia	2	Insulin mixtard	No
	D	S	Gastroenteritis		Aspirin 75 mg	Yes
37	D	No harm	Hyperglycaemia	1	Missing medicine	No
38	D	No harm	Hyperglycaemia	1	Missing medicine	No
39	D	No harm	Hyperglycaemia	1	Insulatard mix Metformin 50 mg	No
40	D	L	Hyperglycaemia	2	Insulin mix	No
	D	M	Uncontrolled blood pressure		Ramipril 1.25 mg	Yes
41	D	L	Hyperglycaemia	1	Missing medicine	Yes
42	D	No harm	Hyperglycaemia	1	Missing medicine	No

Table S2. Cont.

Patient Number	Type	Severity	MRP	N	Medicine	Cause of Admission
43	D	No harm	Hyperglycaemia	1	Insulin NPH Insulin regular	No
44	D	No harm	Hyperglycaemia	1	Missing medicine	No
45	D	L	Hyperglycaemia	1	Missing medicine	Yes
46	D	L harm	Hyperglycaemia	2	Missing medicine	No
	P	No harm	Elevated triglycerides			No
47	D	No harm	Hyperglycaemia	2	Missing medicine Aspirin 75 mg	No
	P	No harm	Abdominal pain			No
48	D	No harm	Hyperglycaemia	1	Glibenclamide 5 mg	No
49	D	No harm	Hyperglycaemia	1	Insulin regular	No
50	D	No harm	Hyperglycaemia	1	Insulin mix	No
51	D	L	Hyperglycaemia	1	Missing medicine	Yes
52	P	No harm	Hyperglycaemia	1	Missing medicine	No
53	P	No harm	HTN	1	Bisoprolol 3.75 mg	No
					Furosemide 40 mg	
54	D	No harm	Hyperglycaemia	2	Missing medicines	Yes
	D	No harm	Elevated triglycerides		Simvastatin 40 mg	No
55	P	No harm	Hyperglycaemia	1	Insulin mix	No
56	D	L	Hyperglycaemia	1	Missing medicine	Yes
57	P	No harm	Productive cough/infection	1	Azithromycin 500 mg	No
58	D	No harm	Hypertension	1	Metoprolol 12.5 mg	No
59	D	No harm	Anaemia	1	Iron	No
					Folic acid 5 mg	
60	D	L	Hyperglycaemia	1	Missing medicine	Yes
61	D	No harm	Hyperglycaemia	2	Gliclazide 160 mg	No
	D	S	Theophylline toxicity		Theophylline 150 mg	Yes
62	D	M	Uncontrolled HTN	1	Amlodipine 10 mg	Yes
					Furosemide 20 mg	
					Isosorbide dinitrate 20 mg	
					Metoprolol 25 mg Perindopril 5 mg	
63	D	M	Digitalis toxicity	1	Digoxin 125 mcg	Yes
64	D	No harm	Hyperglycaemia	1	Insulin mix	No

Table S2. Cont.

Patient Number	Type	Severity	MRP	N	Medicine	Cause of Admission
65	P	No harm	Hyperglycaemia	2	Insulin rapid	No
	P	No harm	Palpitations		Metoprolol 25 mg	
66	D	No harm	Hyperglycaemia	1	Insulin mix	No
67	D	L	Hyperglycaemia	1	Missing medicine	No
68	D	L	Hyperglycaemia	1	Insulin	Yes
69	D	L	Hyperglycaemia	1	Insulin mix	Yes
70	P	No harm	High cholesterol	1	Simvastatin 10 mg	No
71	P	No harm	Vomiting	1	Aspirin 324 mg	No
72	P	no harm	Cough	1	Simvastatin 10 mg	No
73	D	L	Hyperglycaemia	2	Insulin	Yes
	D	M	Bradycardia		Tamsulosin 0.4 mg	Yes
74	D	L	HTN	1	Nifedipine 30 mg	Yes
					Valsartan 160 mg	
75	P	L	Hypoglycaemia	1	Missing medicine	No
76	D	L	Hyperglycaemia	1	Missing medicine	No
77	P	L	HTN	1	Missing medicine	Yes
78	P	No harm	Orthopnoea	1	Aspirin 81 mg	NA
					Furosemide 40 mg	
79	D	L	Hyperglycaemia	1	Insulin rapid	Yes
80	D	S	Gastric bleeding	1	Aspirin 75 mg	Yes
81	D	L	HTN	1	Lisinopril 10 mg	Yes
82	D	M	Abdominal pain	1	Aspirin 75 mg	Yes
					Clopidogrel 75 mg	

