

ภาคผนวก 1 แสดงรายการ คู่ยาที่มีอันตรกิริยารุนแรง(Fatal drug interaction) ที่ห้ามใช้ร่วมกัน (contraindication) โดยจะไม่สามารถสั่งยาร่วมกันได้ โดยระบบสารสนเทศจะล๊อคไม่สามารถสั่งใช้ยาได้ และ กลุ่มที่ 2 แสดงคู่ยาที่มีอันตรกิริยาต่อกัน ที่อาจจะสามารถใช้ร่วมกันได้(Serious Drug interaction) แต่ต้องระบุนเหตุผลการยืนยันการสั่งใช้ยา

กลุ่มที่ 1 Fatal drug interaction ที่ให้ block การสั่งใช้ยาในระบบ									
ลำดับ	ยา	กลุ่มยาที่ใช้ร่วม	ยาที่ใช้ร่วม	Onset	document	Sig.	severity	Effect	Management
1	thioridazine		fluoxetine	delayed	Suspected	1	major	เพิ่มระดับยา Thioridazine อาจทำให้เกิด QT prolong	Contraindicated
2	thioridazine		Paroxetine	delayed	Probable	1	major	เพิ่มระดับยา Thioridazine อาจทำให้เกิด QT prolong	Contraindicated
3	thioridazine		Duloxetine	delayed	suspected	1	major	เพิ่มระดับยา Thioridazine อาจทำให้เกิด QT prolong	Contraindicated
4	thioridazine		Quinine	delayed	suspected	1	major	เพิ่มระดับยา Thioridazine อาจทำให้เกิด QT prolong	Contraindicated
5	thioridazine		propranolol	delayed	Probable	1	major	เพิ่มระดับยา Thioridazine อาจทำให้เกิด QT prolong	Contraindicated
6	sildenafil	Nitrates	nytroglycerine	Rapid	excellent	1	major	severe hypotention	Contraindicated
7	sildenafil		isosorbide mononitrate	Rapid	excellent	1	major	severe hypotention	Contraindicated
8	sildenafil		isosorbide dinitrate	Rapid	excellent	1	major	severe hypotention	Contraindicated
9	ergotamine	Protease Inhibitor	atazanavir	delayed	Probable	1	major	เพิ่มระดับยา ergotamine เสี่ยงในการเกิด ergot toxicity (peripheral vasospasm, ischemia,thrombosis tachycadia, hypertension)	Contraindicated
10	ergotamine		indinavir	delayed	Probable	1	major		Contraindicated
11	ergotamine		Ritonavir	delayed	Probable	1	major		Contraindicated
12	ergotamine		Saquinavir	delayed	Probable	1	major		Contraindicated
13	ergotamine		lopinavir/ritonavir	delayed	Probable	1	major		Contraindicated
14	ergotamine		Darunavir	delayed	Probable	1	major		Contraindicated
15	ergotamine	Azoles antifungal	itraconazole	delayed	Suspected	1	major		Contraindicated
16	ergotamine		Ketoconazole	delayed	Suspected	1	major		Contraindicated
17	ergotamine		Voriconazole	delayed	Suspected	1	major		Contraindicated
18	ergotamine		posaconazole	delayed	Suspected	1	major		Contraindicated
19	ergotamine	Macrolides	Erythromycin	delayed	good	1	major		Contraindicated
20	ergotamine		clarithromycin	Rapid	Probable	1	major		Contraindicated

กลุ่มที่ 2 คู่ยาที่มีอันตรกิริยาต่อกัน (Serious drug interaction) ที่อาจจะสามารถใช้ร่วมกันได้ แต่ต้องระบุนะเหตุผลในการยืนยันการสั่งจ่าย							
ลำดับ	ยา	ยาที่ใช้ร่วม	onset	document	sig.	severity	effect
1	carbamazepine	clarithromycin	rapid	established	1	major	เพิ่มระดับยา carbamazepine เสี่ยงในการเกิด toxicity
2	carbamazepine	erythromycin	rapid	established	1	major	เพิ่มระดับยา carbamazepine เสี่ยงในการเกิด toxicity
3	carbamazepine	azithromycin	rapid	established	1	major	เพิ่มระดับยา carbamazepine เสี่ยงในการเกิด toxicity
4	carbamazepine	roxithromycin	rapid	established	1	major	เพิ่มระดับยา carbamazepine เสี่ยงในการเกิด toxicity
5	ergotamine	azithromycin	rapid	probable	1	major	เพิ่มระดับยา ergotamine เสี่ยงในการเกิด ergot toxicity
6	ergotamine	roxithromycin	rapid	probable	1	major	เพิ่มระดับยา ergotamine เสี่ยงในการเกิด ergot toxicity
7	amiodarone	gatifloxacin	delayed	suspected	1	major	เพิ่มความเสี่ยงในการเกิด cardiac arrhythmia
8	amiodarone	moxifloxacin	delayed	suspected	1	major	เพิ่มความเสี่ยงในการเกิด cardiac arrhythmia
9	amiodarone	levofloxacin	delayed	suspected	1	major	เพิ่มความเสี่ยงในการเกิด cardiac arrhythmia
10	amiodarone	Ofloxacin	delayed	suspected	1	major	เพิ่มความเสี่ยงในการเกิด cardiac arrhythmia
11	thioridazine	levofloxacin	delayed	suspected	1	major	เพิ่มความเสี่ยงในการเกิด cardiac arrhythmia
12	amiodarone	lopinavir/ritonavir	delayed	suspected	1	major	เพิ่มความเสี่ยงในการเกิด cardiac arrhythmia
13	amiodarone	Darunavir	delayed	suspected	1	major	เพิ่มความเสี่ยงในการเกิด cardiac arrhythmia
14	amiodarone	Ritonavir	delayed	suspected	1	major	เพิ่มความเสี่ยงในการเกิด cardiac arrhythmia
15	amiodarone	Indinavir	delayed	suspected	1	major	เพิ่มความเสี่ยงในการเกิด cardiac arrhythmia
16	amiodarone	atazanavir	delayed	suspected	1	major	เพิ่มความเสี่ยงในการเกิด cardiac arrhythmia
17	amiodarone	saquinavir	delayed	suspected	1	major	เพิ่มความเสี่ยงในการเกิด cardiac arrhythmia
18	simvastatin	lopinavir/ritonavir	delayed	suspected	1	major	เพิ่มระดับยา simvastatin เสี่ยงในการเกิด severe myopathy
19	simvastatin	Darunavir	delayed	suspected	1	major	เพิ่มระดับยา simvastatin เสี่ยงในการเกิด severe myopathy
20	simvastatin	Ritonavir	delayed	suspected	1	major	เพิ่มระดับยา simvastatin เสี่ยงในการเกิด severe myopathy
21	simvastatin	Indinavir	delayed	suspected	1	major	เพิ่มระดับยา simvastatin เสี่ยงในการเกิด severe myopathy
22	simvastatin	Atazanavir	delayed	suspected	1	major	เพิ่มระดับยา simvastatin เสี่ยงในการเกิด severe myopathy
23	simvastatin	Saquinavir	delayed	suspected	1	major	เพิ่มระดับยา simvastatin เสี่ยงในการเกิด severe myopathy
24	simvastatin	Ketoconazole	delayed	suspected	1	major	เพิ่มระดับยา simvastatin เสี่ยงในการเกิด severe myopathy
25	simvastatin	Itraconazole	delayed	suspected	1	major	เพิ่มระดับยา simvastatin เสี่ยงในการเกิด severe myopathy
26	simvastatin	Erythromycin	delayed	suspected	1	major	เพิ่มระดับยา simvastatin เสี่ยงในการเกิด severe myopathy
27	simvastatin	posaconazole	delayed	suspected	1	major	เพิ่มระดับยา simvastatin เสี่ยงในการเกิด severe myopathy
28	simvastatin	Voriconazole	delayed	suspected	1	major	เพิ่มระดับยา simvastatin เสี่ยงในการเกิด severe myopathy

29	simvastatin	Danazol	delayed	suspected	1	major	เพิ่มระดับยา simvastatin เสี่ยงในการเกิด severe myopathy
กลุ่มที่ 2 (ต่อ) คู่ยาที่มีอันตรกิริยาต่อกัน (Serious drug interaction) ที่อาจจะสามารถใช้ร่วมกันได้ แต่ต้องระบุนะผลในการยืนยันการสั่งจ่าย							
30	simvastatin	Cyclosporine	delayed	probable	1	major	เพิ่มระดับยา simvastatin เสี่ยงในการเกิด severe myopathy
31	simvastatin	Clarithromycin	delayed	probable	1	major	เพิ่มระดับยา simvastatin เสี่ยงในการเกิด severe myopathy
32	simvastatin	Gemfibrosil	delayed	Probable	1	major	เพิ่มระดับยา simvastatin เสี่ยงในการเกิด severe myopathy
33	carbamazepine	Apixaban	delayed	Probable	1	major	ลดระดับยา apixaban เสี่ยงในการเกิด thromboembolic event
34	carbamazepine	dabigatran	delayed	Probable	1	major	ลดระดับยา dabigratan เสี่ยงในการเกิด thromboembolic event
35	carbamazepine	rivaroxaban	delayed	Probable	1	major	ลดระดับยา rivaroxaban เสี่ยงในการเกิด thromboembolic event
36	ritonavir	Fluoxetine	delayed	established	1	major	เพิ่มความเสี่ยงในการเกิด cardiac arrhythmia
37	ritonavir	Apixaban	delayed	Probable	1	major	เพิ่มระดับยา apixaban เสี่ยงในการเกิด bleeding
38	ritonavir	rivaroxaban	delayed	Probable	1	major	เพิ่มระดับยา rivaroxaban เสี่ยงในการเกิด bleeding
39	apixaban	phenobarbitone	delayed	Probable	1	major	ลดระดับยา apixaban เสี่ยงในการเกิด thromboembolic event
40	apixaban	Rifampicin	delayed	Probable	1	major	ลดระดับยา apixaban เสี่ยงในการเกิด thromboembolic event
41	apixaban	ketoconazole	delayed	Probable	1	major	เพิ่มระดับยา apixaban เสี่ยงในการเกิด bleeding
42	apixaban	itraconazole	delayed	Probable	1	major	เพิ่มระดับยา apixaban เสี่ยงในการเกิด bleeding
43	apixaban	phenytoin	delayed	Probable	1	major	ลดระดับยา apixaban เสี่ยงในการเกิด thromboembolic event
44	rivaroxaban	ketoconazole	delayed	Probable	1	major	เพิ่มระดับยา rivaroxaban เสี่ยงในการเกิด bleeding
45	rivaroxaban	rifampicin	delayed	Probable	1	major	ลดระดับยา rivaroxaban เสี่ยงในการเกิด thromboembolic event
48	rivaroxaban	phenobarbital	delayed	Probable	1	major	ลดระดับยา rivaroxaban เสี่ยงในการเกิด thromboembolic event
49	rivaroxaban	itraconazole	delayed	Probable	1	major	เพิ่มระดับยา rivaroxaban เสี่ยงในการเกิด bleeding
50	rivaroxaban	phenytoin	delayed	Probable	1	major	ลดระดับยา rivaroxaban เสี่ยงในการเกิด thromboembolic event
51	dabigatran	phenobarbital	delayed	Probable	1	major	ลดระดับยา dabigratan เสี่ยงในการเกิด thromboembolic event
53	dabigatran	phenytoin	delayed	Probable	1	major	ลดระดับยา dabigratan เสี่ยงในการเกิด thromboembolic event
54	dabigatran	rifampicin	delayed	Probable	1	major	ลดระดับยา dabigratan เสี่ยงในการเกิด thromboembolic event

ภาคผนวก 2 แสดงคู่ยาที่เกิดอันตรกิริยากับ warfarin ที่บันทึกไว้ในระบบสารสนเทศ รพ.ธรรมศาสตร์ ซึ่งมีการติดตามผู้ป่วยผ่านระบบคัดกรองใบสั่งยาโดยเภสัชกร และระบบส่งต่อให้คำปรึกษาตามเกณฑ์ส่งต่อผู้ป่วยเข้ารับคำปรึกษาการใช้ยา

รหัส	Generic	รหัส	Generic	name	name	name	name	effect	manage	mechanism
1246	WARFARIN	554	GEMFIBROZIL	DELAYED	PROBABLE	MAJOR	NONE FATAL	FIBRIC ACIDS may increase the hypoprothrombinemic effect of oral ANTICOAGULANTS. Bleeding and death have occurred. Warfarin plasma levels are not affected.	If combined use cannot be avoided, monitor INR frequently when a FIBRIC ACID is started or stopped. Be prepared to adjust the ANTICOAGULANT dose. Advise patients to immediately report unusual bleeding or bruising.	Coagulation factor synthesis may be affected.
1246	WARFARIN	277	CIMETIDINE	DELAYED	PROBABLE	MAJOR	NONE FATAL	Increased Warfarin effect ; possible hemorrhage.	Avoid this combination if possible; alternative H ₂ ANTAGONISTS such as nizatidine, appear unlikely to interact. If this combination is used, monitor anticoagulant parameter and tailor WARFARIN doses.	Stereoselective inhibition of hepatic metabolism of the potent (R)-Warfarin enantiomer.
1246	WARFARIN	781	METRONIDAZOLE	DELAYED	PROBABLE	MAJOR	NONE FATAL	Anticoagulant effect of Warfarin may be enhanced; hemorrhage could occur.	Monitor patients more frequently and educate regarding signs and symptoms of bleeding whenever METRONIDAZOLE & WARFARIN are coadministered. A lower dose of WARFARIN may be required.	Liver metabolism of the S-enantiomer of racemic WARFARIN may be decreased by METRONIDAZOLE.
1246	WARFARIN	665	KETOCONAZOLE	DELAYED	PROBABLE	MAJOR	NONE FATAL	Increased anticoagulation effect.	Monitor prothrombin time (PT) and international normalized ratio (INR) values frequently (eg. every 2 days) when add or discontinuing an Azole Antifungal Agent.	Inhibit Warfarin metabolism
1246	WARFARIN	918	PHENOBARBITAL	DELAYED	PROBABLE	MAJOR	NONE FATAL	reduce the effect of Anticoagulants.	Monitor anticoagulant action and tailor doses as needed. Monitor patients for several weeks. Consider using a benzodiazepine.	Increased metabolic clearance of Anticoagulant, probably due to introduction of hepatic microsomal enzyme.
1246	WARFARIN	904	PENTOBARBITAL	DELAYED	PROBABLE	MAJOR	NONE FATAL	Reduce anticoagulant effect.	Monitor anticoagulant action and tailor doses as needed. Monitor patients for several weeks. Consider using a benzodiazepine.	Increased metabolism Anticoagulant, probably due to induction of hepatic microsomal enzyme.
1246	WARFARIN	171	BUTOBARBITONE	DELAYED	PROBABLE	MAJOR	NONE FATAL	reduce anticoagulant effect.	Monitor anticoagulant action and tailor doses as needed. Monitor patients for several weeks. Consider using a benzodiazepine.	Increased metabolism Anticoagulant, probably due to induction of hepatic microsomal enzyme.
1246	WARFARIN	71	AMOBARBITAL	DELAYED	PROBABLE	MAJOR	NONE FATAL	Reduce effect of anticoagulant.	Monitor anticoagulant action and tailor doses as needed. Monitor patients for several weeks. Consider using a benzodiazepine.	Increased metabolism of Anticoagulant, probably due to induction of hepatic microsomal enzymes.
1246	WARFARIN	188	CARBAMAZEPINE	DELAYED	PROBABLE	MODERATE	NONE FATAL	Be diminished during CARBAMAZEPINE coadministration.	Monitor prothrombin times when beginning or stopping CARBAMAZEPINE therapy.	Unknown, to result from induction of hepatic metabolism of Anticoagulant by CARBAMAZEPINE.
1246	WARFARIN	215	CEFAZOLIN	DELAYED	PROBABLE	MODERATE	NONE FATAL	Anticoagulant effect increased.	Reduced Warfarin doses during administration of parenteral CEPHALOSPORINS. Monitor prothrombin times and tailor dose accordingly.	Unknown
1246	WARFARIN	214	CEFAMANDOLE	DELAYED	PROBABLE	MODERATE	NONE FATAL	Increased Anticoagulant effect.	Reduced Warfarin doses during administration of parenteral CEPHALOSPORINS. Monitor prothrombin times and tailor dose accordingly.	Unknown
1246	WARFARIN	221	CEFOXITIN	DELAYED	PROBABLE	MODERATE	NONE FATAL	Increased Anticoagulant effect.	Reduced Warfarin doses during administration of parenteral CEPHALOSPORINS. Monitor prothrombin times and tailor dose accordingly.	Unknown
1246	WARFARIN	225	CEFTRIAZONE	DELAYED	PROBABLE	MODERATE	NONE FATAL	Increased Anticoagulant effect.	Reduced Warfarin doses during administration of parenteral CEPHALOSPORINS. Monitor prothrombin times and tailor dose accordingly.	Unknown
1246	WARFARIN	435	DOPAMINE	RAPID	ESTABLISHED	MAJOR	NONE FATAL	The administration of phenytoin during a dopamine infusion may result in profound hypotension and possibly cardiac arrest.	use phenytoin with extreme caution in patients receiving a dopamine infusion. Monitor blood pressure carefully.	unknown, possibly depletion of catecholamines by dopamine in combination with a myocardial depressant effect of phenytoin.
1246	WARFARIN	889	PARACETAMOL	DELAYED	PROBABLE	MODERATE	NONE FATAL	ACETAMINOPHEN (APAP) increase the antithrombotic effect of oral ANTICOAGULANTS in a dose-dependent manner, which may be clinically important with low dose infrequent use.	Limit APAP use and monitor coagulant parameters more frequently (1-2 times weekly) when starting or stopping APAP, particularly if < 2275 mg/week are consumed. Adjust the ANTICOAGULANT dose as necessary.	Unknown.
1246	WARFARIN	67	AMIODARONE	DELAYED	PROBABLE	MAJOR	NONE FATAL	hypoprothrombinemic effect	Monitor prothrombin times closely during the first 2 to 4 wks of Amiodarone; adjust Warfarin dose as needed.	nonstereoselective inhibition of Warfarin. Amiodarone-induced hyperthyroidism may be a contributing factor in some cases.

รหัส	Generic	รหัส	Generic	name	name	name	name	effect	manage	mechanism
1246	WARFARIN	197	CARBOPLATIN	DELAYED	PROBABLE	MODERATE	NONE FATAL	Anticoagulant effect may be increased.	Carefully monitor coagulation parameters during and after chemotherapy.	Possibly protein displacement,inhibit of Warfarin metabolism,or inhibition of clotting factor synthesis.
1246	WARFARIN	336	CYCLOPHOSPHAMIDE	DELAYED	PROBABLE	MODERATE	NONE FATAL	Anticoagulant effect may be increased.	Carefully monitor coagulation parameters during and after chemotherapy.	Possibly protein displacement,inhibit of Warfarin metabolism,or inhibition of clotting factor synthesis.
1246	WARFARIN	487	ETOPOSIDE	DELAYED	PROBABLE	MODERATE	NONE FATAL	Be increased anticoagulant effect	Carefully monitor parameters during and after chemotherapy.	Possibly protein displacement,inhibit of Warfarin metabolism,or inhibition of clotting factor synthesis.
1246	WARFARIN	525	FLUOROURACIL	DELAYED	PROBABLE	MODERATE	NONE FATAL	Be increased anticoagulant effect of Warfarin.	Carefully monitor parameters during and after chemotherapy.	Possibly protein displacement,inhibit of Warfarin metabolism,or inhibition of clotting factor synthesis.
1246	WARFARIN	513	FLUCONAZOLE	DELAYED	PROBABLE	MAJOR	NONE FATAL	Be increased anticoagulant effect of Warfarin.	Monitor prothrombin time(PT) and international normalized ratio(INR) values frequently(eg. every 2 days)when add or discontinuing an Azole Antifungal Agent.	Inhibition of Warfarin metabolism.
1246	WARFARIN	659	ITACONAZOLE	DELAYED	PROBABLE	MAJOR	NONE FATAL	Increased anticoagulant effect.	Monitor prothrombin time(PT) and international normalized ratio(INR) values frequently(eg. every 2 days)when add or diacontinling an Azole Antifungal Agent.	Inhibit Warfarin metabolism.
1246	WARFARIN	1102	SULFASALAZINE	DELAYED	PROBABLE	MAJOR	NONE FATAL	The anticoagulant effect of warfarin may be enhanced, resulting in hemorrhage	monitor the anticoagulant action of warfarin and adjust the dose as necessary	unclear
1246	WARFARIN	316	CO-TRIMOXAZOLE	DELAYED	PROBABLE	MAJOR	NONE FATAL	The anticoagulant effect of warfarin may be enhanced, resulting in hemorrhage	monitor the anticoaglant action of warfarin and adjust the dose as necessary	unclear. however trimethoprim-sulfamethoxazole appears to inhibit hepatic metabolism of S-warfarin
1246	WARFARIN	760	METHIMAZOLE	DELAYED	PROBABLE	MAJOR	NONE FATAL	The action of oral anticoagulants may be changed during coadministration of thioamines	monitor coagulation indices and observe for clinical signs of excessive or subtherapeutic response to oral anticoagulants during coadmistration of Thioamines	unknown
1246	WARFARIN	999	PROPYLTHIOURACIL	DELAYED	PROBABLE	MAJOR	NONE FATAL	The action of oral anticoagulants may be changed during coadministration of Thioamines	Monitor cpoagulation indices and observe for clinical signs of excessive or subtherapeutic responses to oral anticoagulants during coadministration	unknown
1246	WARFARIN	1241	VITAMIN E	DELAYED	PROBABLE	MAJOR	NONE FATAL	The action of oral anticoagulants may be increased by concurrent administration of vitamin E	closely observe for signs of an excessive hypoprothrombinemic response to oral anticoagulants and monitor coagulation indices during concurrent administration	vitamin E interfere with vitamin K-dependent clotting factors
1246	WARFARIN	281	CIPROFLOXACIN	DELAYED	PROBABLE	MAJOR	NONE FATAL	increased anticoagulant effect of warfarin		
1246	WARFARIN	498	FENOFIBRATE	DELAYED	PROBABLE	MAJOR	NONE FATAL	FIBRIC ACIDS may increase the hypoprothrombinemic effect of oral ANTICOAGULANTS. Bleeding and death have occurred. Warfarin plasma levels are not affected.	If combined use cannot be avoided, monitor INR frequently when a FIBRIC ACID is started or stopped. Be prepared to adjust the ANTICOAGULANT dose. Advise patients to immediately report unusual bleeding or bruising.	Coagulation factor synthesis may be affected.
245	CHLORAMPHENICOL	1246	WARFARIN	DELAYED	PROBABLE	MODERATE	NONE FATAL	Anticoagulation action of oral Anticoagulants may be enhanced by CHLORAMPHENICOL.	Monitor anticoagulant parameter.	Inhibition of hepatic metabolism of oral Anticoagulants.
264	CHOLESTYRAMINE	1246	WARFARIN	DELAYED	PROBABLE	MODERATE	NONE FATAL	Decreased anticoagulant effect.	Separate administration of these agents by > 3 hrs.	Reduced Anticoagulant absorption and increased elimination.
429	DISULFIRAM	1246	WARFARIN	DELAYED	PROBABLE	MODERATE	NONE FATAL	Increased Anticoagulant effect.	Monitor anticoagulant parameter.	Unknown
581	GRISEOFULVIN	1246	WARFARIN	DELAYED	PROBABLE	MODERATE	NONE FATAL	Anticoagulant effect may be decreased.	Monitor Anticoagulant parameters more frequently	Unknown
5051	FLUVASTATIN SODIUM	1246	WARFARIN	DELAYED	PROBABLE	MODERATE	NONE FATAL	Increased anticoagulant effect.	Monitor anticoagulant parameters when starting or discontinuing coadministration of an HMG-CoA REDUCTASE INHIBITOR.	Inhibit WARFARIN hepatic metabolism.
1054	SIMVASTATIN	1246	WARFARIN	DELAYED	PROBABLE	MODERATE	NONE FATAL	Increased anticoagulant effect.	Monitor anticoagulant parameters when starting or discontinuing coadministration of an HMG-CoA REDUCTASE INHIBITOR.	Inhibit Warfarin hepatic metabolism.

รหัส	Generic	รหัส	Generic	name	name	name	name	effect	manage	mechanism
462	ERYTHROMYCIN	1246	WARFARIN	DELAYED	PROBABLE	MAJOR	NONE FATAL	increased anticoagulant effect.Hemorrhage has occurred.	Monitor Anticoagulant parameters frequently when start or stop MACROLIDE ANTIBIOTICS adjustment may be nessary for several days.	Total body clearance of WARFARIN is reduced.
809	NALIDIXIC ACID	1246	WARFARIN	DELAYED	PROBABLE	MODERATE	NONE FATAL	May be enhanced the anticoagulant effect;hemorrhage could occur.	Monito patients more closely during coadministration of WARFARIN and NALIDIXIC ACID.A decreased dose of WARFARIN may be required.	Displacement of WARFARIN from binding sites on plasma proteins.The sustained nature of interaction indicates another machanism is also involved.
375	DICLOFENAC	1246	WARFARIN	DELAYED	PROBABLE	MODERATE	NONE FATAL	Increasing risk of bleeding.	Monitoring patient closely and instruct them to report signs and symptoms of bleeding to health care provider.	Gastric irrigation and decreased platelet function contribute.
736	MEFENAMIC ACID	1246	WARFARIN	DELAYED	PROBABLE	MODERATE	NONE FATAL	Increasing risk of bleeding.	Monitoring patient closely and instruct them to report signs and symptoms of bleeding to health care provider.	Gastric irritation and decreased platelet function contribute.
925	PHENYBUTAZONE	1246	WARFARIN	DELAYED	PROBABLE	MAJOR	NONE FATAL	Enhanced anticoagulant response and increased bleeding risk.	Patients maintained on oral ANTICOAGULANTS should generally not receive PHENYBUTAZONE.Alternative nonsteroidal anti-inflammatory agents are safer.	PHENYBUTAZONE appear to impair liver metabolism of particular oral ANTICOAGULANT and to cause displacement from plasma proteins.
1022	QUININE SULFATE	1246	WARFARIN	DELAYED	PROBABLE	MODERATE	NONE FATAL	Increased Anticoagulant effect ; hemorrhage could occur.	A lower dose of oral ATICOACGULANT may be required when QUININE DERIVATIVES are administered concurrently.	Quinine Derivatives may also inhibit the hepatically synthesized clotting factors.
1021	QUINIDINE	1246	WARFARIN	DELAYED	PROBABLE	MODERATE	NONE FATAL	Increased Anticoagulant effect.	A lower dose of oral ATICOACGULANT may be required when QUININE DERIVATIVES are administered concurrently.	QUININE DERIVATIVES may also inhibit the hepatically synthesized clotting factors.
803	N-ACETYLCYSTEINE	1246	WARFARIN	DELAYED	PROBABLE	MAJOR	NONE FATAL	the anticoagulant effect of oral anticoagulants may be increased. Hemorrhage has occurred	reduced dose or discontinued anticoagulant dose.Monitoring the anticoagulation parameters,	reduce warfarin clearance
1167	THYROXINE SODIUM	1246	WARFARIN	DELAYED	PROBABLE	MAJOR	NONE FATAL	INCREASE ANTICOAGULANT ACTION	OBSERVE BLEEDING AND DECREASE WARFARIN DOSE	DECREASE VIAMIN K DEPENDENT CLOOTING FACTORS
2038	GEMCITABINE	1246	WARFARIN	DELAYED	PROBABLE	MODERATE	NONE FATAL	increase warfarin effect	carefully monitor coagulation parameter during and after chemotherapy. adjust warfarin dose as needed	possibly protein displacement , inhibition of warfarin metabolism or inhibition of clotting factor synthesis
1192	TRAZODONE	1246	WARFARIN	DELAYED	PROBABLE	MODERATE	NONE FATAL	decrease hypoprothrombinemic effect	monitor anticoagulant parameters frequently when starting or stopping trazodone and adjust dose. avoid using PRN	unknown
349	DANAZOL	1246	WARFARIN	DELAYED	PROBABLE	MAJOR	NONE FATAL	The hypoprothrombinemic effect of oral anticoagulants in potentiated by 17-alkyl androgens	avoid the combination.Reduce oral anticoagulants dose and monitor anticoagulation parameters when use combination	unknown

ภาคผนวก 3 แสดงรายการคู่ยาอันตรายระหว่าง warfarin และ NSAIDs ของโรงพยาบาลธรรมศาสตร์เฉลิมพระเกียรติ

name	name	onset	documentation	severity	Fatal/ Non-fatal	effect	manage	mechanism
Acemetacin	Warfarin	Delayed	Fair	moderate	None fatal	Increasing risk of bleeding	Monitor for increased signs and symptoms of bleeding if a vitamin K antagonist and an NSAID are used concomitantly.	nonselective NSAIDs affect platelet aggregation
Ibuprofen	Warfarin	Delayed	Probable	major	None fatal	Increased anticoagulant effect of warfarin and risk of bleeding	Monitoring patient closely and instruct them to report signs and symptoms of bleeding to health care provider.	Gastric irrigation and decreased platelet function contribute.
Indomethacin	Warfarin	Delayed	Probable	major	None fatal	Increased anticoagulant effect of warfarin and risk of bleeding	Monitoring patient closely and instruct them to report signs and symptoms of bleeding to health care provider.	Gastric irrigation and decreased platelet function contribute.
Ketorolac	Warfarin	Delayed	Probable	major	None fatal	Increased anticoagulant effect of warfarin and risk of bleeding	Monitoring patient closely and instruct them to report signs and symptoms of bleeding to health care provider.	Gastric irrigation and decreased platelet function contribute.
Loxoprofen	Warfarin	Delayed	Fair	moderate	None fatal	Increasing risk of bleeding	Monitor for increased signs and symptoms of bleeding if a vitamin K antagonist and an NSAID are used concomitantly.	nonselective NSAIDs affect platelet aggregation
Meloxicam	Warfarin	Not Specified	Fair	moderate	None fatal	Concurrent use may result in increased risk of bleeding.	Monitor anticoagulant activity, particularly in the first few days after initiating or changing therapy in patients receiving warfarin	The effects of warfarin and NSAIDs on GI bleeding are synergistic, such that users of both drugs together have a risk of serious GI bleeding higher than users of either drug alone.
Naproxen	Warfarin	Delayed	Probable	major	None fatal	Increased anticoagulant effect of warfarin and risk of bleeding	Monitoring patient closely and instruct them to report signs and symptoms of bleeding to health care provider.	Gastric irrigation and decreased platelet function contribute.
Piroxicam	Warfarin	Delayed	Probable	major	None fatal	Increased anticoagulant effect of warfarin and risk of bleeding	Monitoring patient closely and instruct them to report signs and symptoms of bleeding to health care provider.	Gastric irrigation and decreased platelet function contribute.
Sulindac	Warfarin	Delayed	Probable	major	None fatal	Increased anticoagulant effect of warfarin and risk of bleeding	Monitoring patient closely and instruct them to report signs and symptoms of bleeding to health care provider.	Gastric irrigation and decreased platelet function contribute.
Celecoxib	Warfarin	Delayed	Probable	major	None fatal	Increased anticoagulant effect of warfarin	If co-administration cannot be avoided, carefully monitor anticoagulants parameters when the dose of the NSAIDs is started, stopped or changed.	The specific mechanism(s) for this interaction is/are unclear. COX-2 inhibitors have no minimal effects on warfarin concentrations (ie, increases in R- or S-warfarin of 10% or less) Bound to albumin, increased free drug of warfarin

Etoricoxib	Warfarin	Delayed	Good	moderate	None fatal	Increased anticoagulant effect of warfarin	the administration of etoricoxib 120 mg daily was associated with an approximate 13% increase in INR. should be closely monitored for INR in the first few days when therapy with etoricoxib is initiated.	The specific mechanism(s) for this interaction is(are) unclear. COX-2 inhibitors have no minimal effects on warfarin concentrations (ie, increases in R- or S-warfarin of 10% or less) Bound to albumin, increased free drug of warfarin
Parecoxib	Warfarin	Delayed	Probable	major	None fatal	Increased anticoagulant effect of warfarin	If co-administration cannot be avoided, carefully monitor anticoagulants parameters when the dose of the NSAIDs is started, stopped or changed.	The specific mechanism(s) for this interaction is(are) unclear. COX-2 inhibitors have no minimal effects on warfarin concentrations (ie, increases in R- or S-warfarin of 10% or less) Bound to albumin, increased free drug of warfarin
DICLOFENAC	WARFARIN	DELAYED	PROBABLE	MODERATE	NONE FATAL	Increasing risk of bleeding.	Monitoring patient closely and instruct them to report signs and symptoms of bleeding to health care provider.	Gastric irritation and decreased platelet function contribute.
MEFENAMIC ACID	WARFARIN	DELAYED	PROBABLE	MODERATE	NONE FATAL	Increasing risk of bleeding.	Monitoring patient closely and instruct them to report signs and symptoms of bleeding to health care provider.	Gastric irritation and decreased platelet function contribute.