

BAB V

KESIMPULAN DAN SARAN

A. Kesimpulan

Dari penelitian ini dapat disimpulkan bahwa:

1. Antihipertensi yang paling banyak digunakan pada pasien hipertensi disertai diabetes mellitus rawat inap Rumah Sakit PKU Muhammadiyah Surakarta pada tahun 2011 adalah amlodipine (48 DDD/100 HR; 41,93%) dan tahun 2012 yaitu amlodipine (55,12 DDD/100 HR; 46,73%)
2. Antihipertensi yang masuk kedalam segmen DU90% tahun 2011 yaitu amlodipine dengan persentase 41,93% dan nifedipin dengan persentase 7,17% untuk golongan CCB, Irbesartan 24,1% untuk golongan ARB, Captopril dengan persentase 5,40%, Ramipril dengan persentase 6,07% untuk golongan ACE-inhibitor, Furosemide 5,33% untuk golongan Diuretik. dan pada tahun 2012 amlodipine dengan persentase 46,73%, nifedipin dengan persentase 3,17%, Diltiazem dengan persentase 5,89% untuk golongan CCB, Irbesartan 27,04%, Telmisartan dengan persentase 3,17% untuk golongan ARB, Furosemide 5,23% untuk golongan Diuretik.
3. Antihipertensi yang digunakan pada pasien hipertensi disertai diabetes mellitus rawat inap Rumah Sakit PKU Muhammadiyah Surakarta pada tahun 2011 dan 2012 telah sesuai 100% dengan Formularium Rumah Sakit dan yang telah sesuai dengan *guidline JNC7* 91,67% adalah captopril, ramipril, irbesartan, telmisartan, valsartan, bisoprolol, carvedilol, amlodipine, diltiazem, nifedipine, furosemide.

B. Saran

1. Bagi rumah sakit

Dapat tetap mempertahankan dan meningkatkan kualitas pelayanan kesehatan sebagaimana visi dan misi RS. PKU Muhammadiyah Surakarta.

2. Bagi peneliti selanjutnya

Diperlukan penelitian kuantitatif penggunaan antihipertensi untuk dapat menghubungkan antara penggunaan obat dengan pengobatan yang rasional terkait dengan kondisi pasien.

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Lampiran 1. Surat keterangan penelitian



SEHAT - SEJAHTERA - ISLAMI

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KODE POS 57131

SURAT KETERANGAN

No. 79/Diklit/RS-PKU/ V/2013.

Manager Diklit RS PKU Muhammadiyah Surakarta, menerangkan bahwa :

Nama : **Poppy Dwi Citra J.**
NIM : **15092743 A.**
Pendidikan : **Program Studi S1 Farmasi Fakultas Farmasi**
Universitas Setia Budi Surakarta.

Tersebut diatas benar-benar telah diijinkan untuk melakukan penelitian dengan metode pengumpulan data secara retrospektif untuk penggunaan obat antihipertensi pada pasien hipertensi di Instalasi rawat inap RS PKU Muhammadiyah Surakarta.

Demikian, surat keterangan ini dibuat untuk dipergunakan sebagaimana mestinya.

Surakarta, 02 Mei 2013.

RS PKU Muhammadiyah Surakarta

Manager Diklit,

**dr. Aswin Wikantama.**

Lampiran 2. ATC/DDD BERDASARKAN WHO COLLABORATING CENTRE
TAHUN 2011 dan 2012

ATC	ANTIHYPERTENSION	DDD	U	Adm. R	Note
CO2	ANTIHYPERTENSIVES				
CO2A	ANTIADRENERGIC AGENTS, CENTRALLY ACTING				
CO2AA	Rauwolfia alkaloids				
	Rescinnamine				
	Reserpine	0,5	mg	O,P	
	Combinations of rauwolfia alkaloids				
	Rauwolfia alkaloids, whole root				
	Deserpidine				
	Methoserpidine				
	Bietaserpine	15	mg	O	
	Reserpine, combinations				
	Combinations of rauwolfia alkaloids, combinations				
	Bietaserpine, combinations				
CO2AB	Methyldopa				
	Methyldopa (levorotatory)	1	g	O,P	
	Methyldopa (racemic)	2	g	O	
CO2AC	Imidazoline receptor agonists				
	Clonidine	0.45	mg	O,P	
	Guanfacine	3	mg	O	
	Tolonidine	0.75	mg	O	
	Moxonidine	0.3	mg	O	
	Rilmenidine				
CO2B	ANTIADRENERGIC AGENTS, GANGLION-BLOCKING				
CO2BA	Sulfonium derivatives				
	Trimetaphan	0.25	g	P	
CO2C	ANTIADRENERGIC AGENTS, PERIPHERALLY ACTING				
CO2CA	Alpha-adrenoreceptor antagonists				
	Prazosin	5	mg	O	
	Indoramin				
	Trimazosin	0.3	g	O	
	Doxazosin	4	mg	O	
	Urapidil	0.12	g	O	

ATC	ANTIHYPERTENSION	DDD	U	Adm. R	Note
		50	mg	P	
CO2B	Guanidine derivatives				
	Betanidine	0.1	g	O	
	Guanethidine	30	mg	O	
	Guanoxan	20	mg	O	
	Debrisoquine	20	mg	O	
	Guanoclor				
	Guanazodine				
	Guanoxabenz	25	mg	O	
CO2D	ARTERIORAL SMOOTH MUSCLE, AGENTS ACTING ON				
CO2DA	Thiazide derivatives				
	Diazoxide	0.3	g	P	
CO2DB	Hydrazinophthalazine derivatives				
	Dihydralazine	75	mg	O	
		25	mg	P	
	Hydralazine	0.1	g	O	
	Endralazine	10	mg	O	
	Cadralazine	15	mg	O	
CO2DC	Pyrimidine derivatives				
	Minoxidil	20	mg	O	
CO2DD	Nitroferricyanide derivatives				
	Nitroprusside	50	mg	P	
CO2DG	Guanidine derivatives				
	Pinacidil	50	mg	O	
CO2K	OTHER ANTIHYPERTENSIVES				
CO2KD	Serotonin antagonists				
	Ketanserin	40	mg	O	
		40	mg	P	
CO3	DIURETICS				
CO3A	LOW-CEILING DIURETICS, THIAZIDES				
CO3AA	Thiazides, plain				
	Bendroflumethiazide	2.5	mg	O	
	Hydroflumethiazide	25	mg	O	
	Hydrochlorothiazide	25	mg	O	

ATC	ANTIHYPERTENSION	DDD	U	Adm. R	Note
	Chlorothiazide	0.5	g	O	
	Polythiazide	1	mg	O	
	Trichlormethiazide	4	mg	O	
	Cyclopenthiiazide	0.5	mg	O	
	Methyclothiazide	5	mg	O	
	Cyclothiazide	5	mg	O	
	Mebutizide				
CO3AB	Thiazides and potassium in combination				
	Bendroflumethiazide and potassium	2.5	mg	O	
	Hydroflumethiazide and potassium	25	mg	O	
	Hydrochlorothiazide and potassium	25	mg	O	
	Chlorothiazide and potassium	0.5	g	O	
	Polythiazide and potassium	1	mg	O	
	Trichlormethiazide and potassium	4	mg	O	
	Cyclopenthiiazide and potassium	0.5	mg	O	
	Methyclothiazide and potassium	5	mg	O	
	Cyclothiazide and potassium	5	mg	O	
CO3B	LOW-CEILING DIURETICS, EXCL. THIAZIDES				
CO3BA	Sulfonamides, plain				
	Quinethazone	50	mg	O	
	Clopamide	10	mg	O	
	Chlortalidone	25	mg	O	
	Mefruside	25	mg	O	
	Clofenamide				
	Metolazone	5	mg	O	
	Meticrane				
	Xipamide	20	mg	O	
	Indapamide	2.5	mg	O	
	Clorexolone				
	Fenquizone				
	Clorexolone, combinations with psycholeptics				
CO3BB	Sulfonamides and potassium in combination				
	Quinethazone and potassium	50	mg	O	
	Clopamide and potassium	10	mg	O	
	Chlortalidone and potassium	25	mg	O	
	Mefruside and potassium	25	mg	O	
	Clofenamide and potassium				
CO3BD	Xanthine derivatives				

ATC	ANTIHYPERTENSION	DDD	U	Adm. R	Note
	Theobromine	4	g	O	
CO3C	HIGH-CEILING DIURETICS				
CO3CA	Sulfonamides, plain				
	Furosemide	40	mg	O	
		40	mg	P	
	Bumetanide	1	mg	O	
		1	mg	P	
	Piretanide				
	Torasemide	15	mg	O	
		15	mg	P	
CO3CB	Sulfonamides and potassium in combination				
	Furosemide and potassium	40	mg	O	
	Bumetanide and potassium	1	mg	O	
CO3CC	Aryloxyacetic acid derivatives				
	Etacrynic Acid	50	mg	O	
		50	mg	P	
	Tienilic Acid				
CO3CD	Pyrazolone derivatives				
	Muzolimine	20	mg	O	
CO3D	POTASSIUM-SPARING AGENTS				
CO3DA	Aldosterone antagonists				
	Spironolactone	75	mg	O	
	Potassium canrenoate	0.4	g	P	
	Canrenone				
	Eplerenone	50	mg	O	
CO3DB	Other potassium-sparing agents				
	Amiloride	10	mg	O	
	Triamterene	0.1	g	O	
CO4	PERIPHERAL VASODILATORS				
CO4A	PERIPHERAL VASODILATORS				
CO4AA	2-amino-1-phenylethanol derivatives				
	Isoxsuprine	60	mg	O	

ATC	ANTIHYPERTENSION	DDD	U	Adm. R	Note
		60	mg	P	
	Buphenine	30	mg	O	
	Bamethan	75	mg	O	
CO4AB	Imidazoline derivatives				
	Phentolamine	10	mg	O	
		10	mg	P	
	Tolazoline	75	mg	O	
CO4AC	Nicotinic acid and derivatives				
	Nicotinic acid	0.2	g	O	
		0.2	g	P	
	Nicotinyl alcohol (pyridylcarbinol)	0.3	g	O	
		0.3	g	P	
	Inositol nicotinate	1.2	g	O	
	Ciclonicate				
CO4AD	Purine derivatives				
	Pentifylline				
	Xantinol nicotinate	0.9	g	O	
		0.9	g	P	
	Pentoxifylline	1	g	O	
		0.3	g	P	
	Etofylline nicotinate	0.3	g	O	
CO4AE	Ergot alkaloids				
	Ergoloid mesylates	3	mg	O	
		3	mg	P	
	Nicergoline				
	Dihydroergocristine				
	Ergoloid mesylates, combinations				
	Dihydroergocristine, combinations				
CO4AF	Enzymes				
	Kallidinogenase	30	U	O	
		30	U	P	
CO4AX	Other peripheral vasodilators				
	Cyclandelate	0.6	g	O	
	Phenoxybenzamine	30	mg	O	
	Vincamine				
	Moxisylyte				
	Bencyclane				

ATC	ANTIHYPERTENSION	DDD	U	Adm. R	Note
	Vinburnine				
	Suloctidil				
	Buflomedil	0.6	g	O	
	Naftidrofuryl	0.6	g	O	
	Butalamine				
	Visnadine	0.6	g	O	
	Cetiedil				
	Cinepazide				
	Ifenprodil				
	Azapetine	0.15	g	O	
	Fasudil				
CO7	BETA BLOCKING AGENTS				
CO7A	BETA BLOCKING AGENTS				
CO7AA	Beta blocking agents, non-selective				
	Alprenolol	0.4	g	O	
		0.4	g	P	
	Oxprenolol	0.16	g	O	
		0.16	g	P	
	Pindolol	15	mg	P	
		15	mg	O	
	propranolol	0.16	g	O	
		0.16	g	P	
	Timolol	20	mg	O	
		20	mg	P	
	Sotalol	0.16	g	P	
		0.16	g	O	
	Nadolol	0.16	g	O	
	Mepindolol	5	mg	O	
	Carteolol	10	mg	O	
	Tertatolol	5	mg	O	
	Bopindolol				
	Bupranolol				
	Penbutolol	40	mg	O	
	Cloranolol				
	Sotalol, combinations				
CO7AB	Beta blocking agents, selective				
	Practolol	0.3	g	O	
		20	mg	P	
	Metoprolol	0.15	g	O	

ATC	ANTIHYPERTENSION	DDD	U	Adm. R	Note
		0.15	g	P	
	ATENOLOL	75	mg	O	
		75	mg	P	
	Acebutolol	0.4	g	O	
		0.4	g	P	
	Betaxolol	20	mg	O	
	Bevantolol	0.3	g	O	
	Bisoprolol	10	mg	O	
	Celiprolol	0.2	g	O	
	Esmolol	2.5	g	P	
	Epanolol	0.2	g	O	
	S-atenolol	50	mg	O	
	Nebivolol	5	mg	O	
	Talinolol	0.1	g	O	
	Metoprolol, combinations				
	Bisoprolol, combinations				
CO7AG	Alpha and beta blocking agents				
	Labetalol	0.6	g	O	
		0.6	g	P	
	Carvedilol	37.5	mg	O	
CO8	CALCIUM CHANNEL BLOCKERS				
CO8C	SELECTIVE CALCIUM CHANNEL BLOCKERS WITH MAINLY VASCULAR EFFECTS				
CO8CA	Dihydropyridine derivatives				
	Amlodipine	5	mg	O	
	Felodipine	5	mg	O	
	Isradipine	5	mg	O	
		5	mg	P	
	Nicardipine	90	mg	P	
		90	mg	O	
	Nifedipine	30	mg	O	
		30	mg	P	
	Nimodipine	0.3	g	O	
		50	mg	P	
	Nisoldipine	20	mg	O	
	Nitrendipine	20	mg	O	
	Lacidipine	4	mg	O	
	Nilvadipine	8	mg	O	
	Manidipine	10	mg	O	
	Barnidipine	10	mg	O	

ATC	ANTIHYPERTENSION	DDD	U	Adm. R	Note
	Lercanidipine	10	mg	O	
	Cilnidipine	10	mg	O	
	Benidipine				
	Clevidipine				
	Nifedipine, combinations				
CO8CX	Other selective calcium channel blockers with mainly vascular effects				
	mibefradil	75	mg	O	
CO8D	SELECTIVE CALCIUM CHANNEL BLOCKERS WITH DIRECT CARDIAC EFFECTS				
CO8DA	Phenylalkylamine derivatives				
	Verapamil	0.24	g	O	
		0.24	g	P	
	Gallopamil				
	Verapamil, combinations				
CO8E	NON-SELECTIVE CALCIUM CHANNEL BLOCKERS				
CO8EA	Phenylalkylamine derivatives				
	Fendiline				
	Bepridil	0.3	g	O	
CO8EX	Other non-selective calcium channel blockers				
	Lidoflazine	0.18	g	O	
	Perhexiline				
CO9	AGENTS ACTING ON THE RENIN-ANGIOTENSIN SYSTEM				
CO9A	ACE INHIBITORS, PLAIN				
CO9AA	ACE inhibitors, plain				
	Captopril	50	mg	O	
	Enalapril	10	mg	O	
		10	mg	P	
	Lisinopril	10	mg	O	
	Perindopril	4	mg	O	
	Ramipril	2.5	mg	O	
	Quinapril	15	mg	O	
		15	mg	P	
	Benazepril	7.5	mg	O	
	Cilazapril	2.5	mg	O	
	Fosinopril	15	mg	O	
	Trandolapril	2	mg	O	

ATC	ANTIHYPERTENSION	DDD	U	Adm. R	Note
	Spirapril	6	mg	O	
	Delapril	30	mg	O	
	Moexipril	15	mg	O	
	Temocapril	10	mg	O	
	Zofenopril	30	mg	O	
	Imidapril	10	mg	O	
CO9C	ANGIOTENSIN II ANTAGONISTS, PLAIN				
CO9CA	Angiotensin II antagonists, plain				
	Losartan	50	mg	O	
	Eprosartan	0.6	g	O	
	Valsartan	80	mg	O	
	Irbesartan	0.15	g	O	
	Tasosartan				
	Candesartan	8	mg	O	
	Telmisartan	40	mg	O	
	Olmesartan Medoxomil	20	mg	O	
	Azilsartan Medoxomil				

Lampiran 3. Data Penggunaan Antihipertensi Pasien Hipertensi disertai Diabetes Mellitus pada Pasien Rawat Inap di RS PKU Muhammadiyah Surakarta 2012

Jumlah Hari Rawat = 508

Golongan	Kode ATC	Nama Obat	Nama Generik	Kekuatan (mg)	Kuantitas penggunaan	Jumlah kekuatan	DDD (mg)	DDD real	Total DDD	Total HR	DDD/100 HR	% penggunaan
ACE Inhibitor	C09AA01	Captopril Tab	Captopril	25	33	825	50	18,5	18,5	508	3,64	3,09
ACE Inhibitor	C09AA01	Acpress Tab	Captopril	25	4	100	50	-	-	508	-	-
ACE Inhibitor	C09AA16	Tanapres Tab	Imidapril	10	4	40	10	2	2	508	0,39	0,33
ACE Inhibitor	C09AA05	Hyperil Tab	Ramipril	10	4	40	2,5	8	8	508	1,5	6,02
ARB	C09CA04	Irvask Tab	Irbesartan	300	27	8100	150	162	162	508	31,89	27,04
ARB	C09CA04	Irtan Tab	Irbesartan	300	36	10800	150	-	-	508	-	-
ARB	C09CA04	Irtan Tab	Irbesartan	150	10	1500	150	-	-	508	-	-
ARB	C09CA04	Irbesartan Tab	Irbesartan	300	27	8100	150	-	-	508	-	-
ARB	C09CA07	Micardis Tab	Telmisartan	40	9	360	40	19	19	508	3,74	3,17
ARB	C09CA07	Micardis Tab	Telmisartan	80	5	400	40	-	-	508	-	-
ARB	C09CA03	Valsartan Tab	Valsartan	80	13	1040	80	13	13	508	2,56	2,17
Beta Blocker	C07AB07	Bisoprolol Tab	Bisoprolol	5	3	15	10	1,5	1,5	508	0,29	0,24
CCB	C08CA01	Amlodipin Tab	Amlodipin	5	39	195	5	280	280	508	55,12	46,73
CCB	C08CA01	Amlodipin Tab	Amlodipin	10	40	400	5	-	-	508	-	-
CCB	C08CA01	Amdixal Tab	Amlodipin	5	9	45	5	-	-	508	-	-
CCB	C08CA01	Amdixal Tab	Amlodipin	10	21	210	5	-	-	508	-	-
CCB	C08CA01	Divask Tab	Amlodipin	5	28	140	5	-	-	508	-	-
CCB	C08CA01	Divask Tab	Amlodipin	10	7	70	5	-	-	508	-	-
CCB	C08CA01	Tensivask Tab	Amlodipin	5	19	95	5	-	-	508	-	-
CCB	C08CA01	Tensivask Tab	Amlodipin	10	14	140	5	-	-	508	-	-
CCB	C08DB01	Herbesser Tab	Diltiazem	30	10	300	240	35,33	35,33	508	6,95	6,95
CCB	C08DB01	Herbesser Tab	Diltiazem	100	1	100	240	-	-	508	-	-
CCB	C08DB01	Herbesser Cap	Diltiazem	200	38	7600	240	-	-	508	-	-
CCB	C08DB01	Diltiazem	Diltiazem	30	10	300	240	-	-	508	-	-
CCB	C08CA05	Adalat Oros Tab	Nifedipin	30	19	570	30	19	19	508	3,74	3,17
Diiuretic	CO3CA01	Furosemid Tab	Furosemid	10	3	2060	40	18,5	18,5	354	6,15	5,23
Diiuretic	CO3CA01	Furosemid Inj	Furosemid	10	18	180	40	-	-	508	-	-
Diiuretic	CO3CA01	Lasix Inj	Furosemid	10	47	470	40	-	-	508	-	-
Diiuretic	CO3CA01	Lasix Tab	Furosemid	40	11	440	40	-	-	508	-	-
Diuretic	CO3AA03	Letonal	Spirolaktone	100	8	800	75	9,67	9,67	508	1,90	1,61
Diuretic	CO3AA03	Spirola	Spirolaktone	25	21	525	75	-	-	508	-	-
Ket:											117,94	100

*HR : Hari rawat
 **DDD : Difine Daily Dose

Lampiran 4. Data Penggunaan Antihipertensi Pasien Hipertensi disertai Diabetes Mellitus pada Pasien Rawat Inap di RS PKU Muhammadiyah Surakarta 2011

Jumlah hari rawat : 402

Golongan	Kode ATC	Nama obat	Nama generik	Kekuatan (mg)	Kuantitas penggunaan	Jumlah kekuatan	DDD (mg)	DDD real	Total DDD	Total HR	DDD /100HR	% Penggunaan
Ace Inhibitor	C09AA01	Captopril Tab	Captopril	12,5	7	87,5	50	24,75	24,75	402	6,16	5,40
Ace Inhibitor	C09AA01	Captopril Tab	Captopril	25	45	1125	50	-	-	402	-	-
Ace Inhibitor	C09AA01	Captopril Tab	Acpress	25	1	87,5	50	-	-	402	-	-
Ace Inhibitor	C09AA03	Tanapres Tab	Imidapril	10	7	70	10	7	7	402	1,74	1,52
Ace Inhibitor	C09AA05	Hyperil Tab	Ramipil	5	14	70	2,5	28	28	402	6,95	6,07
ARB	C09CA06	Irtan Tab	Irbesartan	150	7	1050	150	111	111	402	27,6	24,10
ARB	C09CA06	Irtan Tab	Irbesartan	300	7	6900	150	-	-	402	-	-
ARB	C09CA04	Irvask Tab	Irbesartan	300	28	8400	150	-	-	402	-	-
ARB	C09CA04	Irvask Tab	Irbesartan	150	2	300	150	-	-	402	-	-
ARB	C09CA07	Micardis Tab	telmisartan	40	10	400	40	10	10	402	2,49	2,17
B Bloker	C07AB07	Concor	Bisoprolol	5	9	45	10	4,5	4,5	402	1,12	0,98
B Bloker	C07AG02	V-Block	Carvedilol	6,25	7	43,75	37,5	1,17	1,17	402	0,30	0,26
CCB	C08CA01	Amlopidin Tab	Amlodipin	10	38	380	5	193	193	402	48	41,93
CCB	C08CA01	Amlopidin Tab	Amlodipin	5	63	315	5	-	-	402	-	-
CCB	C08CA01	Divask	Amlodipin	10	30	300	5	-	-	402	-	-
CCB	C08CA01	Divask	Amlodipin	5	42	210	5	-	-	402	-	-
CCB	C08CA01	Tensivask	Amlodipin	5	2	10	5	-	-	402	-	-
CCB	C08DB01	Herbesser Tab	Diltiazem	30	2	60	240	23,38	23,38	402	5,81	5,07
CCB	C08DB01	Herbesser CD	Diltiazem	200	23	4600	240	-	-	402	-	-
CCB	C08DB01	Herbesser CD	Diltiazem	100	8	800	240	-	-	402	-	-
CCB	C08CA05	Herbesser Inj	Diltiazem	50	3	150	240	-	-	402	-	-
CCB	C08CA05	Nifedipin Tab	Nifedipin	30	23	990	30	33	33	402	8,21	7,17
Diuretic	C03CA01	Furosemid Inj	Furosemid	20	5	100	40	24,5	24,5	402	6,1	5,33
Diuretic	C03CA01	Lasix Inj	Furosemid	10	51	570	40	-	-	402	-	-
Diuretic	C03AA01	Lasix Tab	Furosemid	40	4	160	40	-	-	402	-	-
Ket											114,48	100

*HR : Hari rawat
 **DDD : Define Daily Dose

Lampiran 5. Perhitungan DDD

Define Daily Dose (DDD) dapat dihitung dengan menggunakan rumus sebagai berikut:

$$\text{DDD/100 HR Antihipertensi} = \frac{\text{Total DDD satu tahun}}{\text{Total hari rawat satu tahun}} \times 100\%$$

Persentase penggunaan antihipertensi dihitung dengan menggunakan rumus :

% penggunaan antihipertensi

$$= \frac{\text{DDD/100HR antihipertensi A}}{\text{Total DDD/100HR semua antihipertensi yang digunakan}} \times 100\%$$

a. Penggunaan Bisoprolol pada tahun 2011 dengan jumlah hari rawat 402:

- Concor 5 mg tab, yang digunakan 9

$$\text{Total penggunaan:} = (5 \text{ mg} \times 9) = 45 \text{ mg}$$

$$\text{DDD untuk sediaan bisoprolol} = 10 \text{ mg}$$

$$\text{DDD real} = 45 \text{ mg} / 10 \text{ mg} = 4,5 \text{ mg}$$

$$\text{DDD/100 HR} = \frac{4,5}{402} \times 100\% = 1,12 \% \text{ DDD/100 hari}$$

$$\text{Total DDD/100HR} = 114,48 \text{ (lihat tabel 5)}$$

$$\% \text{ penggunaan Bisoprolol} = \frac{1,12}{114,48} \times 100\%$$

$$= 0,98 \% \text{ (lihat tabel 5)}$$

Lampiran 6. Formularium Rumah Sakit PKU Muhammadiyah Surakarta 2012

5. CARDIOVASCULAR & HEMATOPOIETIC SYSTEM				
5.1. ACE INHIBITORS				
NO	NAMA OBAT	KOMPOSISI	SEDIAAN	PABRIK
1	ACPRESS 25 MG TAB	CAPTAPRIL	TABLET	BERNO
2	CAPTAPRIL 12,5 MG TAB		TABLET	GENERIK
3	CAPTAPRIL 12.5 TAB ASKES		TABLET	GENERIK
4	CAPTAPRIL 25 MG TAB		CAPSUL	GENERIK
5	CAPTAPRIL 25 TAB ASKES		TABLET	GENERIK
6	DEXACAP 12.5 MG TAB ASKES		TABLET	DEXA MEDICA
7	DEXACAP 25 MG TAB ASKES		TABLET	DEXA MEDICA
8	TENACE 5 MG	ENALAPRIL MALEAT	TABLET	COMBIPHAR
9	TENACE 10 MG		TABLET	COMBIPHAR
10	TENAZIDE TAB	ENALAPRIL*	TABLET	COMBIPHAR
11	TANAPRESS 5 TABLET ASKES	IMIDAPRIL HCL	TABLET	TANABE
12	TANAPRESS 10 TABLET ASKES		TABLET	TANABE
13	TANAPRESS 5 MG		TABLET	TANABE
14	TANAPRESS 10 MG		TABLET	TANABE
15	NOPERTEN 10 MG	LISINOPRIL	TABLET	DEXA MEDICA
16	NOPERTEN 10 MG TABLET ASKES		TABLET	DEXA MEDICA
17	BIOPREXUM PLUS TABLET	PERINDOPRIL ARGININE/INDAPAN	TABLET	SERVIER
18	COVERAM 5MG/5MG TABLET	PERINDOPRIL*	TABLET	SERVIER
19	COVERAM 10MG/10MG TABLET		TABLET	SERVIER
20	HYPERIL 5 MG	RAMIPRIL	TABLET	FERRON
21	HYPERIL 10 MG		TABLET	FERRON
22	CARDACE 10 MG ASKES		TABLET	SANOFI AVENTIS
5.2. ANGIOTENSIN II ANTAGONISTS				
1	CANDERIN 8	CANDESARTAN	TABLET	DEXA MEDICA
2	BLOPRESS 16		TABLET	TAKEDA
3	IRVASK 150 MG	IRBESARTAN	TABLET	KALBE
4	IRVASK 300 MG		TABLET	KALBE
5	IRTAN 150 TAB ASKES		TABLET	IKA PHARMA
6	IRTAN 300 TAB ASKES		TABLET	IKA PHARMA
7	IRBESARTAN 300 MG		TABLET	GENERIK
8	IRTAN PLUS TAB	IRBESARTAN + HCT	TABLET	IKA PHARMA
9	CO APROVEL 300 TAB		TABLET	SANOFI AVENTIS
10	ANGIOTEN 50 TAB	LOSARTAN K	TABLET	KALBE
11	MICARDIS 40 MG CAP	TELMISARTAN	TABLET	BOEHRINGER I
12	MICARDIS 80 MG CAP ASKES		TABLET	BOEHRINGER I
13	MICARDIS PLUS 40 MG TABLET		TABLET	BOEHRINGER I
14	VALSARTAN NI 160 TAB ASKES	VALSARTAN	TABLET	DEXA MEDICA
15	VALSARTAN NI 80 TAB ASKES		TABLET	DEXA MEDICA
16	EXFORGE 10/160	VALSARTAN+AMLODIPINE	TABLET	NOVARTIS

5.5. BETA BLOCKERS				
1	BETABLOK 50 TAB ASKES	ATENOLOL	TABLET	KALBE
2	BISOPROLOL 5 MG	BISOPROLOL FUMARAT	TABLET	GENERIK
3	CONCOR 2.5 MG		TABLET	MERCK
4	CONCOR 5 MG		TABLET	MERCK
5	CONCOR 5 MG TABLET ASKES		TABLET	MERCK
6	MAINTATE 5 MG		TABLET	TANABE
7	MAINTATE 5 MG TABLET ASKES		TABLET	TANABE
8	V-BLOC 25 TAB	CARVEDILOL	TABLET	KALBE
9	V-BLOC 6,25 TAB ASKES		TABLET	KALBE
10	V-BLOC 6.25 MG		TABLET	KALBE
11	FARMADRAL 10 TABLET ASKES	PROPANOLOL HCL	TABLET	FAHRENHEIT
12	PROPANOLOL 10 MG		TABLET	GENERIK
13	PROPANOLOL 40 MG		TABLET	GENERIK
5.6. CALCIUM ANTAGONISTS				
1	AMIDIXAL 5 MG	AMLODIPINE	TABLET	SANDOZ
2	AMIDIXAL 10 MG		TABLET	SANDOZ
3	AMLODIPINE 5 MG TABLET		TABLET	GENERIK
4	AMLODIPINE 10 MG TABLET		TABLET	GENERIK
5	DIVASK 5 MG ASKES		TABLET	KALBE
6	DIVASK 10 MG ASKES		TABLET	KALBE
7	DIVASK 5 MG		TABLET	KALBE
8	DIVASK 10 MG	AMLODIPIN	TABLET	KALBE
9	EXFORGE 10/160	AMLODIPIN*	TABLET	NOVARTIS
10	NORVASK 5 MG TAB	AMLODIPIN	TABLET	PFIZER
11	NORCASK 10 MG TAB		TABLET	PFIZER
12	TENSIVASK 5 MG TAB		TABLET	DEXA MEDICA
13	TENSIVASK 10 MG TAB		TABLET	DEXA MEDICA
14	DILTIAZEM 30 MG TAB	DILTIAZEM	TABLET	GENERIK
15	FARMABES 25 MG INJEKSI		VIAL	FAHRENHEIT
16	FARMABES TABLET ASKES		TABLET	FAHRENHEIT
17	HERBESSER 30		TABLET	TANABE
18	HERBESSER 50 INJ ASKES		AMPUL	TANABE
19	HERBESSER 50 MG INJEKSI		AMPUL	TANABE
20	HERBESSER CD 100		KAPSUL	TANABE
21	HERBESSER CD 100 CAP ASKES		TABLET	TANABE
22	HERBESSER CD 200		CAPSUL	TANABE
23	HERBESSER CD 200 CAP ASKES		TABLET	TANABE
24	ADALAT OROS 30 MG	NIFEDIPINE	TABLET	BAYER
25	ADALAT OROS 30 TABLET ASKES		TABLET	BAYER
26	NIFEDIPIN 10 GENERIK		TABLET	GENERIK

5.8. DIURETICS				
1	FARSIX INJEKSI ASKES	FUROSEMID	AMPUL	FAHRENHEIT
2	FUROSEMIDE		TABLET	GENERIK
3	FUROSEMIDE INJEKSI		AMPUL	GENERIK
4	FUROSEMIDE TABLET ASKES		TABLET	GENERIK
5	BMPUGAN INJEKSI ASKES		AMPUL	ACTAVIS
6	LASIX 40 MG/ TAB		TABLET	SANOFI AVENTIS
7	LASIX INJ		AMPUL	SANOFI AVENTIS
8	HCT 25 MG	HYDROCHLOR TIAZIDE	TABLET	GENERIK
9	HCT 25 MG TABLET ASKES		TABLET	GENERIK
10	HCT 50 MG TAB		TABLET	GENERIK
11	NATRILIX SR TABLET	INDAPAMIDE	TABLET	SERVIER
12	MANITOL	MANITOL	FLABOT	ORSUKA
13	MANITOL ASKES		FLABOT	OTSUKA
14	CARPIATON 25 MG TABLET ASKES	SPIRONOLACTONE	TABLET	FAHRENHEIT
15	LETONAL 25 TAB		TABLET	OTTO
16	LETONAL 100 TAB		TABLET	OTTO
17	SPIROLA 25 TAB		TABLET	KALBE
18	SPIROLA 25 TABLET ASKES		TABLET	KALBE
19	SPIROLA 100 ASKES		TABLET	KALBE
20	SPIROLA 100 TAB		TABLET	KALBE

Lampiran 7. Perhitungan LOS (*Length of Stay*) tahun 2011

LOS = jumlah rawat inap : jumlah pasien

- LOS januari = 27:5
= 6,75
- LOS februari = 22:5
= 4,4
- LOS maret = 12:6
= 2
- LOS april = 51:6
= 8,5
- LOS mei = 37:4
= 9,25
- LOS juni = 24:3
= 8
- LOS juli = 6:6
= 1
- LOS agustus = 80:10
= 8
- LOS september = 30:5
= 6
- LOS oktober = 55:7
= 7,8
- LOS november = 42:6
= 7
- LOS desember = 17:2
= 8,5
- ❖ LOS tahun 2011 = 86,2: 12
= 7,2

Lampiran 8. Perhitungan LOS (*Length of Stay*) 2012

LOS = jumlah rawat inap : jumlah pasien

- LOS januari = 15:3
= 5
- LOS februari = 26:4
= 6,5
- LOS maret = 53:8
= 6,6
- LOS april = 77:9
8,5
- LOS mei = 35:5
7
- LOS juni = 75:9
= 8,3
- LOS juli = 60:9
= 6,7
- LOS agustus = 31:2
= 15,5
- LOS september = 24:4
= 6
- LOS oktober = 50:7
= 7,14
- LOS november = 24:4
= 6
- LOS desember = 38:5
= 7,6
- ❖ LOS Total tahun 2012 = 90,8 : 12
= 7,6

Lampiran 9. Obat Antihipertensi Berdasarkan JNC 7

CLASS	DRUG (TRADE NAME)	USUAL DOSE RANGE IN MG/DAY	USUAL DAILY FREQUENCY
Thiazide diuretics	Chlorothiazide (Diuril)	125-500	1-2
	chlorthalidone (generic)	12.5-25	1
	hydrochlorothiazide (Microzide, HydroDIURIL [®])	12.5-50	1
	polythiazide (Renese)	2-4	1
	indapamide (Lozol [®])	1.25-2.5	1
	metolazone (Mykrox)	0.5-1.0	1
	metolazone (Zaroxolyn)	2.5-5	1
Loop diuretics	bumetanide (Bumex [®])	0.5-2	2
	furosemide (Lasix [®])	20-80	2
	toremide (Demadex [®])	2.5-10	1
Potassium-sparing diuretics	amiloride (Midamor [®])	5-10	1-2
	triamterene (Dyrenium)	50-100	1-2
Aldosterone receptor blockers	eplerenone (Inspra)	50-100	1
	spironolactone (Aldactone [®])	25-50	1
BBs	atenolol (Tenormin [®])	25-100	1
	betaxolol (Kerlone [®])	5-20	1
	bisoprolol (Zebeta [®])	2.5-10	1
	metoprolol (Lopressor [®])	50-100	1-2
	metoprolol extended release (Toprol XL)	50-100	1
	nadolol (Corgard [®])	40-120	1
	propranolol (Inderal [®])	40-160	2
	propranolol long-acting (Inderal LA [®])	60-180	1
	timolol (Blocadren [®])	20-40	2
BBs with intrinsic sympathomimetic activity	acebutolol (Sectral [®])	200-800	2
	penbutolol (LevatoI)	10-40	1
	pindolol (generic)	10-40	2
Combined alpha- and BBs	carvedilol (Coreg)	12.5-50	2
	labetalol (Normodyne, Trandate [®])	200-800	2

CLASS	DRUG (TRADE NAME)	USUAL DOSE RANGE IN MG/DAY	USUAL DAILY FREQUENCY
ACEIs	benazepril (Lotensin [®])	10-40	1
	captopril (Capoten [®])	25-100	2
	enalapril (Vasotec [®])	5-40	1-2
	fosinopril (Monopril)	10-40	1
	lisinopril (Prinivil, Zestril [®])	10-40	1
	moexipril (Univasc)	7.5-30	1
	perindopril (Aceon)	4-8	1
	quinapril (Accupril)	10-80	1
	ramipril (Altace)	2.5-20	1
	trandolapril (Mavik)	1-4	1
Angiotensin II antagonists	candesartan (Atacand)	8-32	1
	eprosartan (Teveten)	400-800	1-2
	irbesartan (Avapro)	150-300	1
	losartan (Cozaar)	25-100	1-2
	olmesartan (Benicar)	20-40	1
	telmisartan (Micardis)	20-80	1
	valsartan (Diovan)	80-320	1-2
CCBs—non-Dihydropyridines	Diltiazem extended release (Cardizem CD, Dilacor XR, Tiazac [®])	180-420	1
	diltiazem extended release (Cardizem LA)	120-540	1
	verapamil immediate release (Calan, Isoptin [®])	80-320	2
	verapamil long acting (Calan SR, Isoptin SR [®])	120-480	1-2
	verapamil—Coer, Covera HS, Verelan PM)	120-360	1
CCBs—Dihydropyridines	amlodipine (Norvasc)	2.5-10	1
	felodipine (Plendil)	2.5-20	1
	isradipine (Dynacirc CR)	2.5-10	2
	nicardipine sustained release (Cardene SR)	60-120	2
	nifedipine long-acting (Adalat CC, Procardia XL)	30-60	1
	nisoldipine (Sular)	10-40	1
	doxazosin (Cardura)	1-16	1
	terazosin (Hytrin)	1-20	1-2
Alpha-1 blockers	prazosin (Minipress [®])	2-20	2-3
	terazosin (Hytrin)	1-20	1-2
	doxazosin (Cardura)	1-16	1
	prazosin (Minipress [®])	2-20	2-3
	terazosin (Hytrin)	1-20	1-2
Central alpha-2 agonists and other centrally acting drugs	clonidine (Catapres [®])	0.1-0.8	2
	clonidine patch (Catapres-TTS)	0.1-0.3	1 wkly
	methyldopa (Aldomet [®])	250-1,000	2
	reserpine (generic)	0.1-0.25	1
	guanfacine (Tenex [®])	0.5-2	1
Direct vasodilators	hydralazine (Apresoline [®])	25-100	2
	minoxidil (Loniten [®])	2.5-80	1-2