**Chapter 2: Cardiovascular system**

**2.1 Positive Inotropic Drugs**

**2.1.1 Cardiac Glycosides**

|  |  |  |  |
| --- | --- | --- | --- |
| Nice CG180 Atrial Fibrillation | Remain on  formulary | Remove from formulary | Other Information |
| Digoxin Tablets, Elixir, Injection | G |  | \*Npsa alert Guidelines for preventing fatalities from medication loading does \*  Bioavailabilities are Injection 100% Liquid80% Tablets 70% |
| Digoxin 500micrograms/ml injection | Red |  |  |
| Digoxin 100micrograms/ml injection. Hospital, Paediatrics Only (SP) | Red |  | Hospital paediatrics only. |

**2.1.2 Phosphodiesterase Type-3 Inhibitors**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Remain on  formulary | Remove from formulary | Other Information |
| Enoximone 100mg/20ml Injection | red |  |  |

**2.2 Diuretics**

**2.2.1 Thiazides and Related Diuretics**

|  |  |  |  |
| --- | --- | --- | --- |
| Nice cg127: hypertension: clinical management of primary hypertension in adults | Remain on formulary | Remove from  formulary | Other Information |
| Bendroflumethiazide Tablets | g |  |  |
| Indapamide 2.5mg Tablets | g |  |  |
| Indapamide 1.5mg SR Tablets |  | Remove | \*Possibly used in stroke –dr banargee\* |
| Chlortalidone 50mg Tablets |  | Remove |  |
| Metolazone Tablets. Consultant Only (unlicensed medicine |  |  |  |
| Chlorothiazide 250mg/5ml Suspension. Hospital, Paediatrics Only (U) | Hospital / paediatrics only |  |  |

**2.2.2 Loop Diuretics**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Remain on Formulary | Remove from formulary | Other Information |
| Furosemide Tablets, Liquid | Tablets and Liquid formulary.- Green |  |  |
| Furosemide Injection |  |  |  |
| Bumetanide Tablets, | Bumetanide tablest Green |  |  |
| Bumetanide injection |  |  | Injection is discontinued in UK – but unlicenced import can be found |

**2.2.3 Potassium-Sparing Diuretics and Aldosterone Antagonists**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Remain on Formulary | Remove from formulary | Other Information |
| Spironolactone Tablets, Suspension | Green |  | 1st choice |
| Amiloride Tablets | Green |  |  |
| Triamterene Capsules |  | Remove |  |
| Eplerenone Tablets. Hospital, Consultant Only | Was red / now possibly amber?  Green  Restricted use  Second line in those intolerant to spironolactone |  | Propose amber (no shared care protocol.- disc at APC -  2nd line after spiro has been trialed  Criteria |

**2.2.4 Potassium-Sparing Diuretics with Other Diuretics**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Remain on Formulary | Remove from Formulary | Other Information |
| Co-amilofruse (amiloride/furosemide) Tablets |  |  |  |
| Co-amilozide (amiloride/hydrochlorothiazide) Tablets |  | remove |  |
| Triamterene/Furosemide Tablets |  | remove |  |
| Amiloride/Bumetanide Tablets |  | remove |  |
| Spironolactone/Furosemide Capsules Primary care initiated, only when necessary |  | remove |  |

**2.2.5 Osmotic Diuretics**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Remain on Formulary | Remove from Formulary | Other Information |
| Mannitol Infusion | red |  |  |

**2.2.8 Diuretics with Potassium**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Remain on Formulary | Remove from Formulary | Other Information |
| Furosemide/Potassium Tablets. Primary care initiated, only when necessary |  | Remove from formulary |  |

**2.3 Anti-Arrhythmic Drugs**

**2.3.2 Drugs for Arrhythmias**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Remain on Formulary | Remove from Formulary | Other Information |
| Amiodarone Tablets, Injection | Injection hospital only |  |  |
| Flecainide Tablets, Syrup, | Tablets as amber  Syrup as red and restricted  Injection is red |  | Restricted use of syrups Stipulation on when syrup can be used. |
| Flecainide injection | yes |  |  |
| Disopyramide Capsules | yes |  |  |
| Disopyramide MR Tablets | yes |  |  |
| Propafenone Tablets | yes |  |  |
| Dronedarone Tablets. Hospital Only | yes |  |  |
| Mexiletine Capsules, Injection | yes |  | \*\*need to add on net formulary\*\* no format for it yet |
| Adenosine Injection | yes |  |  |
| Procainamide Injection | yes |  |  |
| Lidocaine Injection | yes |  |  |
| Ajmaline Injection 50mg/10ml. Consultant cardiologist only for diagnosis of Brugada syndrome | yes |  | \*\*need to add on net formulary\*\* no format for it yet |

**2.4 Beta-Adrenoceptor Blocking Drugs**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Remain on Formulary | Remove from Formulary | Other Information |
| Atenolol Tablets, Syrup | Green  Injection is red |  |  |
| Atenolol Injection | yes |  |  |
| Bisoprolol Tablets | yes |  |  |
| Propranolol Tablets | yes |  |  |
| Propranolol Oral solutio, SR Capsules | GREEN ACCEPT INJECTION IS RED AND SR capsules we are proposing as restricted use |  |  |
| Propranolol Injection | yes |  |  |
| Carvedilol Tablets | yes |  |  |
| Sotalol Tablets | yes |  |  |
| Metoprolol Tablets | yes |  |  |
| Nebivolol Tablets | Amber restricted as still used |  | Better effect less side effects worsening of peripheral vascular disease . or plasmatic problem |
| Labetalol Tablets | yes |  |  |
| Celiprolol Tablets | yes |  |  |
| Co-tenidone Tablets | yes | Remove |  |
| Oxprenolol Tablets | yes | Remove |  |
| Labetalol Injection | yes |  |  |
| Esmolol Injection / Infusion | yes |  |  |

**2.5 Hypertension and Heart Failure**

**2.5.1 Vasodilator and Antihypertensive Drugs**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Remain on Formulary** | **Remove from Formulary** | **Other Information** |
| Hydralazine Tablets, | yes |  |  |
| Hydralazine Injection | yes |  |  |
| Minoxidil Tablets | yes |  | **Dr thakray wants it as amber but to be discussed with clinical leads of NLCC** |
| Sodium Nitroprusside Injection | yes |  |  |

**2.5.2 Centrally Acting Antihypertensive Drugs**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Remain on Formulary | Remove from Formulary | Other Information |
| Methyldopa Tablets | yes |  |  |
| Moxonidine Tablets | yes |  |  |
| Clonidine Injection, Tablets | yes |  |  |
| Clonidine tablets | yes |  |  |

**2.5.3 Adrenergic Neurone Blocking Drugs**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Remain on Formulary | Remove from formulary | Other Information |
| Guanethidine Injection | yes |  |  |

**2.5.4 Alpha-Adrenoceptor Blocking Drugs**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Remain on formulary | Remove from Formulary | Other Information |
| Doxazosin Tablets | yes |  |  |
| Terazosin Tablets |  | no | No useage data in secondary care – clarify primary care data.. potentially remove |
| Prazosin Tablets | yes |  |  |
| Indoramin Tablets | yes |  |  |
| Phenoxybenzamine Capsules, Injection | yes |  |  |
| Phentolamine Injection. Hospital Only | yes |  |  |

**2.5.5 Drugs affecting the Renin Angiotensin System**

**2.5.5.1 Angiotensin Converting Enzyme Inhibitors**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Remain on Formulary | Remove from Formulary | Other information |
| Ramipril Tablets, Capsules | Green |  |  |
| Lisinopril Tablets | yes |  |  |
| Enalapril Tablets | yes |  |  |
| Captopril Tablets, | yes |  |  |
| Captopril Oral solution | Yes- restricted |  |  |
| Perindopril Tablets | yes |  |  |

**2.5.5.2 Angiotensin-II Receptor Antagonists**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Remain on Formulary | Remove from Formulary | Other Information |
| Losartan Tablets | yes |  |  |
| Valsartan Capsules, Tablets | yes |  |  |
| Irbesartan Tablets | yes |  |  |
| Olmesartan Tablets |  | Remove |  |
| Candesartan Tablets | yes |  |  |
| Valsartan with Hydrochlorothiazide Capsules |  | Remove |  |

**2.5.5.3 Neprilysin Inhibitors with Angiotensin-II Receptor Antagonists**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Remain on Formulary | Remove from Formulary | Supporting  Information |
| Sacubitril-Valsartan Tablets. As Per [NICE TA388](https://www.nice.org.uk/guidance/ta388). Specialist Initiation Only. Patient must be stabilised before primary care prescribing. See Pathway | Red |  | Working towards amber with no shared care yes agreement |

**Hypertension and Heart Failure Miscellaneous**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Remain on Formulary | Remove from Formulary | Support Information |
| Tolazoline Injection. Hospital, Paediatrics Only (S) | red |  |  |

**2.6 Nitrates, Calcium Channel Blockers and Potassium Channel Activators**

**2.6.1 Nitrates**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Remain on Formulary | Remove from Formulary | Supporting Information |
| Isosorbide Mononitrate Tablets | yes |  |  |
| Glyceryl Trinitrate Tablets | yes |  |  |
| Glyceryl Trinitrate Injection | yes |  |  |
| Glyceryl Trinitrate Spray | yes |  |  |
| Glyceryle trinitrate patches | yes |  | Patches to be kept as red and restricted |
| Glyceryl trinitrate ointment |  |  |  |
| Isosorbide Dinitrate Injection | yes |  |  |

**2.6.2 Calcium Channel Blockers**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Remain on Formulary | Remove from Formulary | Supporting Information |
| Amlodipine Tablets | yes |  | 1st choice |
| Nifedipine Capsules, MR Tablets. Prescribe by Brand | yes |  |  |
| Felodipine MR Tablets |  |  | 2nd line but dr thakray agreed for it to be removed from the formulary |
| Diltiazem MR (12hour) Tablets, Capsules. Prescribe by brand | yes |  |  |
| Diltiazem XL (24 hour) Capsules. Prescribe by brand | yes |  |  |
| Verapamil Tablets, MR Capsules | yes |  |  |
| Verapamil injection | yes |  |  |
| Lacidipine Tablets | yes |  |  |
| Lercanidipine Tablets | Restricted use |  | Is it more cost effective then felodipine |
| Nicardipine Capsules, MR Tablets |  |  | * Query with renal failure pts\* |
| Nimodipine Tablets, | yes |  |  |
| Nimodipine injection | yes |  |  |

**2.6.3 Other Antianginal Drugs**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Remain on formulary | Remove from formulary | Supporting information |
| Nicorandil Tablets | yes |  |  |
| Ivabradine Tablets. Consultant Initiation Only | yes |  |  |
| Ranolazine MR Tablets. As Agreed Pathway | yes |  |  |

**2.6.4 Peripheral Vasodilators and Related Drugs**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Remain on Formulary | Remove from Formulary | Supporting Information |
| Naftidrofuryl oxalate Capsules | Nice guidance |  |  |
| Pentoxifylline 400mg MR Tablets. Consultant Immunologist Initiated for Behcets NB No restrictions for licenced indications. |  |  | Speak to hazel around commissioning and if dr sull still uses it  Amber |
| Rutosides Capsules |  |  |  |
| Cilostazol |  |  |  |
| Inositol nicotinate Tablets |  |  |  |

**2.7 Sympathomimetics**

**2.7.1 Inotropic Sympathomimetics**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Remaining on Formulary | Remove from Formulary | Supporting Information |
| Dopexamine 10mg/ml Injection | Yes |  |  |
| Dobutamine Injection | Yes |  |  |
| Dopamine Injection | Yes |  |  |

**2.7.2 Vasodilator Sympathomimetics**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Remaining on Formulary | Remove from formulary | Supporting information |
| Ephedrine Injection. Hospital Only | Yes |  |  |
| Noradrenaline (Norepinephrine) Injection. Hospital Only | Yes |  |  |
| Metaraminol Injection. Hospital Only | Yes |  |  |
| Midodrine Tablets (U, S).. Specialist Initiated Only | Yes |  |  |

**2.7.3 Cardiopulmonary Resuscitation**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Remain on formulary | Remove fom formulary | Supporting Infomation |
| Adrenaline (Epinephrine) Injection | **Yes** |  |  |

**2.8 Anticoagulants and Protamine**

**2.8.1 Parental Anticoagulants**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Remain on Formulary | Remove from formulary | Supporting information |
| Tinzaparin Syringes | **Leave as red** |  | **Discussion with apc** |
| Fondaparinux Sodium Acute Coronary Syndrome | Yes |  |  |
| Epoprostenol Injection | Yes |  |  |
| Heparin Injection | Yes |  |  |
| Heparin flush Injection | Yes |  |  |
| Heparinised Saline Injection | Yes |  |  |
| Iloprost Injection (NP, U) | Yes |  |  |
| Lepirudin Injection. Hospital Only | Yes |  |  |
| TauroLock. Hospital, Chemotherapy Only | Yes |  |  |
| Bivalirudin. Hospital Only [NICE TA230](http://guidance.nice.org.uk/TA230) | Yes |  |  |

**2.8.2 Oral Anticoagulants**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Remain on Formulary | Remove from Formulary | Supporting information |
| Warfarin Tablets |  |  |  |
| Dabigatran Capsules – Available for all appropriate NICE Technology Appraisals. See Pathway for TA Advice |  |  |  |
| Rivaroxaban Tablets – Available for all appropriate NICE Technology Appraisals. See Pathway for TA Advice |  |  |  |
| Apixaban Tablets  – Available for all appropriate NICE Technology Appraisals. See Pathway for TA Advice |  |  |  |
| Edoxaban  – Available for all appropriate NICE Technology Appraisals. See Pathway for TA Advice |  |  |  |
| Phenindione Tablets |  |  |  |
| Acenocoumarol |  |  |  |

**2.8.3 Protamine Sulphate**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Remain on formulary | Remove from formulary | Supporting information |
| Protamine sulphate injection | **yes** |  |  |

**2.8.4 Anticoagulation Reversal Options**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Remain on formulary | Remove from formulary | Supporting information |
| Idarucizumab Injection. Hospital Only. For reversal of dabigatran anticoagulation only. Not suitable for Anti Xa agents | **yes** |  |  |

**2.9 Antiplatelet Drugs**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Remain on formulary | Remove from formulary | Supporting Information |
| Aspirin Soluble Tablets | **yes** |  |  |
| Clopidogrel Tablets | yes |  |  |
| Dipyridamole MR Capsules, | yes |  |  |
| Dipyridamole Suspension | yes |  |  |
| Dipyridamole injection | yes |  |  |
| Aspirin & Dipyridamole MR Capsules (Asasantin Retard) | yes |  |  |
| Prasugrel Tablets. As per cardiac network protocols | yes |  |  |
| Ticagrelor Tablets. As per cardiac network protocols – [TA420](https://www.nice.org.uk/guidance/ta420) | yes |  |  |
| Eptifibatide Injection. Hospital Only | yes |  |  |
| Tirofiban Injection. Hospital Only | yes |  |  |
| Abciximab Injection. Hospital Only | yes |  |  |

**2.10 Stable Angina, Acute Coronary Syndromes and Fibrinolysis**

**2.10.2 Fibrinolytic Drugs**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Remain on formulary | Remove from formulary | Supporting information |
| Alteplase Injection. Hospital Only | yes |  |  |
| Streptokinase Injection. Hospital Only | yes |  |  |
| Tenecteplase Goole. Hospital Only | yes |  |  |
| Urokinase Injection. Hospital Only | yes |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
| i) Tranexamic Acid Tablets, Injection | **yes** |  |  |
| Tranexamic acid injection | **yes** |  |  |
| ii) Etamsylate Tablets |  |  |  |
| iii) Factor VIIa (Novo-seven) | **yes** |  |  |
| iv) Octaplex | **yes** |  |  |

**2.12 Lipid-Regulating Drugs**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Remain on formulary | Remove from formulary | Supporting Information |
| Simvastatin Tablets | **yes** |  |  |
| Atorvastatin Tablets | **yes** |  |  |
| Pravastatin Tablets | **yes** |  |  |
| Ezetimibe Tablets |  | **Limited clinical value, but coming off patent soon therefore will be cheaper** | **Discuss with clinical lead and propose it becomes non formulary** |
| Rosuvastatin Tablets | **Keep as red- working going on about changing about changing patients from rosuvastatin to atorvastatin – propose green restricted** |  | **restricted -** |
| Bezafibrate Tablets | **yes** |  |  |
| Bezafibrate MR Tablets | yes |  |  |
| Colestyramine Sachets | yes |  |  |
| Fish oils (Maxepa) Capsules |  |  |  |
| Gemfibrozil Tablets, Capsules |  |  |  |
| Nicotinic Acid Tablets |  |  |  |
| Alirocumab Pre-Filled Pen 75 mg only  ([NICE TA 393](https://www.nice.org.uk/guidance/ta393)) | **yes** |  | **Anootate has high costs** |
| Evolucamab nice ta | **yes** |  | **Annotate as high cost** |

**2.13 Local sclerosants**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Remain on formulary** | **Remove from formulary** |  |
| Ethanolamine Oleate Injection. Hospital Only | **yes** |  |  |
| Phenol in Oil Injection. Hospital Only | yes |  |  |
| Phenol in Water Injection. Hospital Only | yes |  |  |
| Sodium Tetradecyl Sulphate Injection. Hospital Only | yes |  |  |

**2.14 Drugs affecting the ductus arteriosus**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Remain on formulary | Remove from formulary | Supporting Information |
| Ibuprofen Injection (Pedea). Hospital Only (U) | **yes** |  |  |

**Other drugs used in diagnostics**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Remain on formulary | Remove from formulary | Supporting information |
| Acetylcysteine Effervescent Tablets 600mg. Hospital Only (U) | **yes** |  |  |