

## Guidelines for the Use of Warfarin - Optimal Therapeutic Range and Duration<sup>1</sup>

| INDICATION/GRADE OF EVIDENCE  | INR  | DURATION                    | COMMENT  |
|---|--|-----------------------------|--|
| <b>ANTIPHOSPHOLIPID SYNDROME</b>  |  |                             |  |
| no other risk factors; no tx failures [2B]  | 2.5 (2.0 - 3.0)  | long-term                   | Higher range may be required   |
| additional risk factors; tx failure [2C]  | 3.0 (2.5 - 3.5)  | long-term                   |  |
| <b>ATRIAL FIBRILLATION/ATRIAL FLUTTER</b>   |  |                             |  |
| Persistent AF (PAF)/Intermittent AF + high risk factor [1A]<br>Atrial Flutter + high risk factor [2C]                                       | 2.5 (2.0-3.0)  | long-term                   | High risk factors: prior ischemic stroke, TIA, HTN, DM, systemic embolism, age>75, LVF impairment or ASA 325mg/day |
| PAF +age 65-75, no other risk factor [1A]<br>Atrial Flutter +age 65-75, no other risk factor [2C]   | 2.5 (2.0 - 3.0)  | long-term                   |  |
| PAF <65 years old with no other risk factors [1B]   | NONE   |                             | ASA 325 mg/day   |
| AF + mitral stenosis [1C+]  | 2.5 (2.0-3.0)  | long-term                   |  |
| AF + Prosthetic valves [1C+]  | 2.5 (2.0-3.0) OR<br>3.0 (2.5-3.5)  | long-term                   | ±ASA; range depends on type of valve (see below)   |
| AF following cardiac surgery lasting >48hr,<br>acceptable bleed risk [2C]   | 2.5 (2.0-3.0)  | NSR<br>+Several wks         | Duration depends on presence of other risk factors   |
| <b>Cardioversion</b>  |  |                             |  |
| pre-cardioversion (Afib or flutter > 48 hours) [1C+]  | 2.5 (2.0 - 3.0)  | 3 weeks                     |  |
| post-cardioversion (in NSR) [1C+]   | 2.5 (2.0 - 3.0)  | 4 weeks                     | Extend duration if AF reoccurs or other risk factors   |
| AF>48/unknown duration+negative for thrombusTEE [1B]  | 2.5 (2.0-3.0)  | 5 days pre- &<br>4 wks post | Initiate UFH-PTT 60s (50-70sec); Extend duration if AF reoccurs or presence other risk factors                     |
| AF < 48 hours – no stroke risk factors [2C]   | NONE   |                             | Initiate UFH-PTT 60s (50-70s)<br>or Treatment DVT dose LMWH on presentation  |
| Emergency cardioversion, no TEE available [2C]  | 2.5 (2.0-3.0)  | 4 weeks post                | Initiate UFH-PTT 60s (50-70sec); Extend duration if AF reoccurs or presence other risk factors                     |
| <b>ISCHEMIC STROKE</b>  |  |                             |  |
| AF + recent stroke or TIA [1A]  | 2.5 (2.0 - 3.0)  | long-term                   |  |
| Cerebral venous thrombosis [1C]   | 2.5 (2.0 - 3.0)  | 3-6 months                  |  |
| <b>THROMBOEMBOLISM (DVT, PE)</b>  |  |                             |  |
| Initial treatment [1A]  | Start treatment day 1; LMWH or UFH for at least 5 days until INR > 2.0 [1A]  |                             |  |
| Treatment/prevention of recurrence  |  |                             |  |
| first episode/ transient risk factors [1A]  | 2.5 (2.0 - 3.0)  | 3 months                    |  |
| first episode/ idiopathic [1A]  | 2.5 (2.0 - 3.0)  | 6-12 months                 | Consider indefinite treatment [2A]   |
| DVT or PE + cancer [1A][1C]   | Indefinite or cancer resolution [1C]; LMWH for first 3-6 months [1A]<br>dalteparin 200 IU/kg x 1 mo followed by 150IU/kg qd OR tinzaparin 175 U/kg sc qd |                             |  |
| 1 <sup>st</sup> episode +APLA or ≥ 2 thrombophilic conditions [FVL;<br>prothrombin 20210 gene mutation] [1C+]                               | See below  | 12 months                   | Consider indefinite therapy [2C]   |
| 1 <sup>st</sup> episode + AT-III, protein C or protein S deficient;<br>FVL;prothrombin 20210, homocysteinemia, high factor VIII levels [1A] | 2.5 (2.0 - 3.0)  | 6-12 months                 | Consider indefinite therapy [2C]   |
| two or more episodes [2A]   | 2.5 (2.0 – 3.0)  | long-term                   |  |
| <b>VALVULAR DISEASE</b>   |  |                             |  |
| aortic valve disease with mobile atheroma or aortic plaque > 4mm [2C]   | 2.5 (2.0 – 3.0)  | long-term                   | NONE unless other indication [2C]  |
| mitral annular calcification + systemic embolisation [2C]   | 2.5 (2.0 – 3.0)  | long-term                   |  |
| mitral valve prolapse   | No systemic embolism, TIA, or AF – NONE [1C]   |                             |  |
| with documented, unexplained TIA [1A]   | Long term ASA 50-162 mg/day  |                             |  |
| with embolism or recurrent of TIA despite ASA [2C]  | 2.5 (2.0 - 3.0)  | long-term                   |  |
| rheumatic mitral valve disease  |  |                             |  |
| with AF, hx systemic embolization [1C+]   | 2.5 (2.0 - 3.0)  | long-term                   | Concomitant antiplatelet NOT recommended [2C]  |
| embolic event despite anticoagulation [1C]  | 2.5 (2.0 - 3.0)  | long-term                   | Add ASA 75-100 mg/d, dipyridamole or clopidogrel   |
| NSR + Left Atrium >5.5 cm [2C]  | 2.5 (2.0 - 3.0)  | long-term                   | NONE if NSR and left atrial diameter <5.5 cm   |
| Mitral valvuloplasty [2C]   | 2.5 (2.0 - 3.0)  | 3 wks pre- & 4wks post      |  |
| <b>VALVE REPLACEMENT - BIOPROSTHETIC</b>  |  |                             |  |
|   | UFH or LMWH until INR stable and therapeutic x 2 days[2C]  |                             |  |
| mitral position [1C+]   | 2.5 (2.0 - 3.0)  | 3 months                    |  |
| aortic [2C]   | 2.5 (2.0 - 3.0)  | 3 months                    | Or ASA 80-100 mg/day [1C]  |
| with history of systemic embolism [1C]  | 2.5 (2.0 - 3.0)  | 3 – 12 months               |  |
| with AF [1C+]   | 2.5 (2.0 - 3.0)  | long-term                   |  |
| sinus rhythm [1C+]  | not required   | long-term                   | ASA 75-100 mg qd   |
| <b>VALVE REPLACEMENT - MECHANICAL</b>   |  |                             |  |
|   | UFH or LMWH until INR stable and therapeutic x 2 days[2C]  |                             |  |
| St Jude Medical bileaflet valve in aortic position [1A]   | 2.5 (2.0 - 3.0)  |                             |  |
| tilting disk valves/bileaflet valves in mitral position [1C+]   | 3.0 (2.5 - 3.5)  |                             |  |
| CarboMedics bileaflet or Medtronic Hall tilting disk in aortic position, normal atrial size and sinus rhythm [1C+]                          | 2.5 (2.0 - 3.0)  |                             |  |
| caged ball or caged disk valves [2A]  | 3.0 (2.5 - 3.5)  | long-term                   | with ASA 75-100 qd   |
| with additional risk factors<br>(AF, MI, LAR, Low EF; endocardial damage) [1C+]   | 3.0 (2.5 - 3.5)  | long-term                   | add ASA 75-100mg qd  |
| systemic embolism despite therapeutic INR [1C+]   | 3.0 (2.5 - 3.5)  |                             | add ASA 75-100mg qd  |
| requiring VKA discontinuation   |  |                             | LMWH [1C] or ASA 80-100 mg/day [1C]  |

Hirsh J, Guyatt G, Albers G, et al. 7<sup>th</sup> ACCP Conference on Anti-thrombotic and Thrombolytic Therapy. CHEST. 2004; 126 (suppl 3): 163S-704S.