Findings Released from Largest Real-World Data Analysis of Non-Valvular Atrial Fibrillation Patients Receiving Direct Oral Anticoagulants

Release Date: Sunday, March 11, 2018 8:00 am EDT

Terms: $BMY

Dateline City: PRINCETON, N.J. & NEW YORK, N.Y.

- **Eliquis®** (apixaban) use was associated with lower rates of stroke or systemic embolism and major bleeding than matched patients receiving rivaroxaban or dabigatran
- **This oral presentation is one of nine Bristol-Myers Squibb-Pfizer Alliance abstracts being presented at the American College of Cardiology's 67th Annual Scientific Session & Expo**

This retrospective observational analysis utilizing pre-specified endpoints included three 1:1 propensity score individually matched DOAC cohorts: apixaban vs. rivaroxaban (n=125,238), apixaban vs. dabigatran (n=54,192), and dabigatran vs. rivaroxaban (n=55,076). The analysis also revealed that in the dabigatran vs. rivaroxaban cohort, dabigatran was associated with a significantly lower rate of both stroke/systemic embolism (S/SE) (hazard ratio [HR]:0.83, 95% confidence interval [CI]: 0.73 to 0.94, p=0.004) and major bleeding (MB) (HR:0.54, 95% CI: 0.50 to 0.58, p=<0.001) when compared to rivaroxaban; and significantly lower rates of both S/SE (HR:0.69, 95% CI: 0.56 to 0.84, p=<0.001) and MB (HR:0.77, 95% CI: 0.68 to 0.88, p=<0.001) when compared to dabigatran.

This retrospective observational analysis using propensity-score matching (PSM) included NVAF patients (n=162,707) from 5 large databases, including CMS fee-for-service Medicare data, Medicare Supplemental and Coordination of Benefits Database, the IMS PharMetrics Plus™ Database, the Optum Clinformatics™ Data Mart, and the Humana Research Database. After 1:1 DOAC-DOAC PSM in each database, the resulting patient records were pooled. Patients were followed for a mean of six months. Cox models were used to evaluate the rates of S/SE and of MB across DOACs within one year of therapy initiation. Patients with NVAF were included regardless of the dose of DOACs used.

**Study Details:** This was a retrospective observational cohort analysis of non-valvular atrial fibrillation (NVAF) patients utilizing pre-specified endpoints and analyzed using propensity-score matching (PSM). It includes NVAF patients (n=162,707) from ARISTOPHANES (Anticoagulants for Reduction In STroke: Observational Pooled analysis on Health outcomes A nd Experience of patientS), an ongoing real-world data analysis initiative that now includes anonymized patient records from more than 300,000 patients. The analysis presented at ACC includes patients who initiated apixaban, rivaroxaban or dabigatran, from Jan. 1, 2013, to Sept. 30, 2015, pooled from 5 large databases, including CMS fee-for-service Medicare data, Truven MarketScan® Commercial Claims and Encounter and Medicare Supplemental and Coordination of Benefits Database, the IMS PharMetrics Plus™ Database, the Optum Clinformatics™ Data Mart, and the Humana Research Database. After 1:1 DOAC-DOAC PSM in each database, the resulting patient records were pooled. Patients were followed for a mean of six months. Cox models were used to evaluate the rates of S/SE and of MB across DOACs within one year of therapy initiation.

Patients with NVAF were included regardless of the dose of DOACs used.

**Limitations of Real-World Data Analyses and of ARISTOPHANES:** Real-world data have the potential to supplement randomized controlled trial data by providing additional information about how a medicine performs in routine medical practice. Real-world data analyses have several limitations. For example, the source and type of data used may limit the generalizability of the results and of the endpoints. Observational real-world studies can only evaluate association and not causality. Due to these limitations, real-world data analyses cannot be used as stand-alone evidence to validate the results of clinical trials.
**WARNINGS AND PRECAUTIONS**

**CONTRAINDICATIONS**

Consider the benefits and risks before neuraxial intervention in patients anticoagulated or to be anticoagulated.

**WARNINGS AND PRECAUTIONS**

**Increased Risk of Thrombotic Events after Premature Discontinuation:** Premature discontinuation of any oral anticoagulant, including ELIQUIS, in the absence of adequate alternative anticoagulation increases the risk of thrombotic events. An increased rate of stroke was observed during the transition from ELIQUIS to warfarin in clinical trials in atrial fibrillation patients. If ELIQUIS is discontinued for a reason other than pathological bleeding or completion of a course of therapy, consider coverage with another anticoagulant.

**Bleeding Risk:** ELIQUIS increases the risk of bleeding and can cause serious, potentially fatal, bleeding.

- Concomitant use of drugs affecting hemostasis increases the risk of bleeding, including aspirin and other antiplatelet agents, other anticoagulants, heparin, thrombolytic agents, SSRIs, SNRIs, and NSAIDs.

- Advise patients of signs and symptoms of blood loss and to report them immediately or go to an emergency room. Discontinue ELIQUIS in patients with active pathological hemorrhage.

- There is no established way to reverse the anticoagulant effect of apixaban, which can be expected to persist for at least 24 hours after the last dose (i.e., about two half-lives). A specific antidote for ELIQUIS is not available.

**Spinal/Epidural Anesthesia or Puncture:** Patients treated with ELIQUIS undergoing spinal/epidural anesthesia or puncture may develop an epidural or spinal hematoma which can result in long-term or permanent paralysis.
The risk of these events may be increased by the postoperative use of indwelling epidural catheters or the concomitant use of medicinal products affecting hemostasis. Indwelling epidural or intrathecal catheters should not be removed earlier than 24 hours after the last administration of ELIQUIS. The next dose of ELIQUIS should not be administered earlier than 5 hours after the removal of the catheter. The risk may also be increased by traumatic or repeated epidural or spinal puncture. If traumatic puncture occurs, delay the administration of ELIQUIS for 48 hours.

Monitor patients frequently and if neurological compromise is noted, urgent diagnosis and treatment is necessary. Physicians should consider the potential benefit versus the risk of neuaxial intervention in ELIQUIS patients.

- **Prosthetic Heart Valves**: The safety and efficacy of ELIQUIS have not been studied in patients with prosthetic heart valves and is not recommended in these patients.

- **Acute PE in Hemodynamically Unstable Patients or Patients who Require Thrombolysis or Pulmonary Embolectomy**: Initiation of ELIQUIS is not recommended as an alternative to unfractionated heparin for the initial treatment of patients with PE who present with hemodynamic instability or who may receive thrombolysis or pulmonary embolectomy.

### ADVERSE REACTIONS

- The most common and most serious adverse reactions reported with ELIQUIS were related to bleeding.

### TEMPORARY INTERRUPTION FOR SURGERY AND OTHER INTERVENTIONS

- ELIQUIS should be discontinued at least 48 hours prior to elective surgery or invasive procedures with a moderate or high risk of unacceptable or clinically significant bleeding. ELIQUIS should be discontinued at least 24 hours prior to elective surgery or invasive procedures with a low risk of bleeding or where the bleeding would be noncritical in location and easily controlled. Bridging anticoagulation during the 24 to 48 hours after stopping ELIQUIS and prior to the intervention is not generally required. ELIQUIS should be restarted after the surgical or other procedures as soon as adequate hemostasis has been established.

### DRUG INTERACTIONS

- **Combined P-gp and Strong CYP3A4 Inhibitors**: Inhibitors of P- glycoprotein (P-gp) and cytochrome P450 (CYP3A4) increase exposure to apixaban and increase the risk of bleeding. For patients receiving ELIQUIS doses of 5 mg or 10 mg twice daily, reduce the dose of ELIQUIS by 50% when ELIQUIS is coadministered with drugs that are combined P-gp and strong CYP3A4 inhibitors (e.g., ketoconazole,itraconazole, or ritonavir). In patients already taking 2.5 mg twice daily, avoid coadministration of ELIQUIS with combined P-gp and strong CYP3A4 inhibitors.

  **Clarithromycin**
  Although clarithromycin is a combined P-gp and strong CYP3A4 inhibitor, pharmacokinetic data suggest that no dose adjustment is necessary with concomitant administration with Eliquis.

- **Combined P-gp and Strong CYP3A4 Inducers**: Avoid concomitant use of ELIQUIS with combined P-gp and strong CYP3A4 inducers (e.g., rifampin, carbamazepine, phenytoin, St. John’s wort) because such drugs will decrease exposure to apixaban.

- **Anticoagulants and Antiplatelet Agents**: Coadministration of antiplatelet agents, fibrinolytics, heparin, aspirin, and chronic NSAID use increases the risk of bleeding. APPRAISE-2, a placebo-controlled clinical trial of apixaban in high-risk post-acute coronary syndrome patients treated with aspirin or the combination of aspirin and clopidogrel, was terminated early due to a higher rate of bleeding with apixaban compared to placebo.

### PREGNANCY CATEGORY B

- There are no adequate and well-controlled studies of ELIQUIS in pregnant women. Treatment is likely to increase the risk of hemorrhage during pregnancy and delivery. ELIQUIS should be used during pregnancy only if the potential benefit outweighs the potential risk to the mother and fetus.

Please see full Prescribing Information, including BOXED WARNINGS and Medication Guide, available at [www.bms.com](http://www.bms.com).

### About ARISTOTLE

ARISTOTLE (Apixaban for Reduction In STroke and Other ThromboemboLicz Events in Atrial Fibrillation) was designed to evaluate the efficacy and safety of Eliquis versus warfarin for the prevention of stroke or systemic embolism. In ARISTOTLE, 18,201 patients were randomized (9,120 patients to Eliquis and 9,081 to warfarin). ARISTOTLE was an active-controlled, randomized, double-blind, multi-national trial in patients with nonvalvular atrial fibrillation or atrial flutter, and at least one additional risk factor for stroke. Patients were randomized to treatment with Eliquis 5 mg orally twice daily (or 2.5 mg twice daily in selected patients, representing 4.7 percent of all patients) or warfarin (target INR range 2.0-3.0), and followed for a median of 1.8 years.

### About the Bristol-Myers Squibb/Pfizer Collaboration

In 2007, Pfizer and Bristol-Myers Squibb entered into a worldwide collaboration to develop and commercialize apixaban, an oral anticoagulant discovered by Bristol-Myers Squibb. This global alliance combines Bristol-Myers Squibb's long-standing strengths in cardiovascular drug development and commercialization with Pfizer's global scale and expertise in this field.

### About Bristol-Myers Squibb

Bristol-Myers Squibb is a global biopharmaceutical company whose mission is to discover, develop and deliver innovative medicines that help patients prevail over serious diseases. For more information about Bristol-Myers Squibb, visit us at [www.bms.com](http://www.bms.com).
This press release contains “forward-looking statements” as that term is defined in the Private Securities Litigation Reform Act of 1995 regarding the research, development and commercialization of pharmaceutical products. Such forward-looking statements are based on current expectations and involve inherent risks and uncertainties, including factors that could delay, divert or change any of them, and could cause actual outcomes and results to differ materially from current expectations. No forward-looking statement can be guaranteed. Forward-looking statements in this press release should be evaluated together with the many uncertainties that affect Bristol-Myers Squibb's business, particularly those identified in the cautionary factors discussion in Bristol-Myers Squibb's Annual Report on Form 10-K for the year ended December 31, 2017, in our Quarterly Reports on Form 10-Q and our Current Reports on Form 8-K. Bristol-Myers Squibb undertakes no obligation to publicly update any forward-looking statement, whether as a result of new information, future events or otherwise.

Pfizer Disclosure Notice

The information contained in this release is as of March 11, 2018. Pfizer assumes no obligation to update forward-looking statements contained in this release as the result of new information or future events or developments.

This release contains forward-looking information about Eliquis (apixaban), including its potential benefits, that involves substantial risks and uncertainties that could cause actual results to differ materially from those expressed or implied by such statements. Risks and uncertainties include, among other things, the uncertainties inherent in research and development, including, without limitation, the ability to meet anticipated clinical trial commencement and completion dates as well as the possibility of unfavorable clinical trial results, including unfavorable new clinical data and additional analyses of existing clinical data; decisions by regulatory authorities regarding labeling and other matters that could affect the availability or commercial potential of Eliquis; and competitive developments.

A further description of risks and uncertainties can be found in Pfizer's Annual Report on Form 10-K for the fiscal year ended December 31, 2017 and in its subsequent reports on Form 10-Q, including in the sections thereof captioned “Risk Factors” and “Forward-Looking Information and Factors That May Affect Future Results”, as well as in its subsequent reports on Form 8-K, all of which are filed with the U.S. Securities and Exchange Commission and available at www.sec.gov and www.pfizer.com.


2 Amin, A et al. Risk of stroke/systemic embolism, major bleeding and associated costs in non-valvular atrial fibrillation patients who initiated apixaban, dabigatran, or rivaroxaban compared with warfarin in the United States Medicare population. Current Medical Research and Opinion. DOI: 10.1080/03007995.2017.1345729