Table 1. Characteristics of included studies.

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| 1st author  (year/ country) | Design | Stroke Type  (no. participants) | Follow-up Duration | Medication class | Persistence Measurement | Quality |
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| Budimkic et al. (2016/Serbia) | Retrospective observational study | IS and without intravenous thrombolysis  (203+197) | Median: 3 years  (range 1–7 years) | Antiplatelets  Oral anti-coagulants  Antihypertensive drugs  Statins  Hypoglycemic drugs | Determined by comparing the recommended hospital discharge medications with the current medications reported by the patients (self-report) | 0.67 |
| Burke et al. (2010/USA) | Retrospective observational study | IS (1,413) | Mean: 1.5 years | Antiplatelets | \*Nonpersistence: Defined as the first incident of failure to refill index medication within 30 days from the run-out date of the prior prescription. | 0.78 |
| Bushnell et al. (2011/USA) | Observational cohort study | IS, TIA (2,457) | 1 year | Warfarin  Antiplatelet Antihypertensive  Lipid-lowering agents  Diabetes medications | Defined as continuation of all secondary  preventive medications prescribed at hospital discharge | 0.91 |
| Bushnell et al. (2010/USA) | Observational cohort study | IS, TIA (2,598) | 3 months | Warfarin  Antiplatelet Antihypertensive  Lipid-lowering agents  Diabetes medications | Defined as continuation of all secondary  preventive medications prescribed at hospital discharge | 0.82 |
| Glader et al. (2010/Sweden) | Prospective observational study | All types of stroke  (21,077) | 2 years | Statins  Antiplatelet  Warfarin  (for only IS) | Defined as a patient who had purchased the drug at a pharmacy at least once during each 4-month interval after hospital discharge. | 0.78 |
| Ji et al. (2013/China) | Prospective observational study | IS, TIA  (9,998) | 3 months | Antiplatelets  Warfarin  Antihypertensives  Statins  Diabetic agents | Defined as medication(s) continuation from hospital discharge to 3-month post discharge. | 0.89 |
| Jiang et al.  (2017/China) | Longitudinal observational study | IS and TIA  (18,344) | 3 months | Antiplatelets  Warfarin  Antihypertensive drugs  Statins  Diabetes medications | Defined as continuation of all secondary preventive medications prescribed at discharge (self-report) | 0.89 |
| Ostergarrd et al. (2012/Denmark) | Longitudinal observational study | IS  (503) | Median of 2.8 years (IQR 0.8–7.8) | Antiplatelets | \*Nonpersistence: Defined as the first episode during the study period when a subject failed to present a subsequent prescription within the time window defined by the duration of the preceding prescription. | 0.66 |
| Ostergarrd et al. (2014/Denmark) | Longitudinal observational study | TIA  (594) | Median of 1.7 years (IQR 0.9–3.0) | Antiplatelets | \*Nonpersistence: Defined as failure to present a prescription for antiplatelet drugs within 180 days after the dosage of a previous prescription had run out. | 0.78 |
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| Rijkmans et al. (2018/Netherlands) | Retrospective cohort study | IS  (286) | Median of 5.5 year | Antiplatelets  Statins  Antihypertensive drugs  Anticoagulants | Defined as still using the medication after discharge from hospital during follow-up  or until death | 0.73 |
| Rodriguez et al. (2011/USA) | Longitudinal observational study | TIA, IS (2,720) | 12 months | Antiplatelets  Warfarin Antihypertensives  Lipid-lowering agents, Diabetic agents | Defined as continuing on a therapy or class of therapy from discharge to either 3-month or 12-month follow-up | 0.67 |
| Sjölander et al. (2012/Sweden) | Longitudinal observational study | IS (18,349) | 2 years | Antihypertensives Statins  Antiplatelets  Warfarin | Defined as at least one filled prescription  in every 4-month period after discharge. | 0.89 |
| Tsai et al.  (2014/Canada) | Retrospective cohort study | IS  (6,347) | 2 year | Antihypertensive drugs  Lipid-lowering agents | Prescription filling was used as a proxy measure | 0.64 |
| Ullberg et al.  (2017/Sweden) | Longitudinal observational study | IS  (5,602) | 14 months | Antihypertensive drugs  Antithrombotic drugs  Warfarin  Statins | Drug adherence: defined as filling the first drug prescription within 120 days after stroke  During persistence: defined as filling a prescription between 10 and 14 months after stroke | 0.78 |
| Wang et al.  (2016/China) | Prospective cohort study | IS with and without medical complications  (1,061+6,532) | 1 year | Antiplatelets  Antihypertensive drugs  Diabetic agents | Defined as medication(s) continuation during discharge and 12-month post-onset. | 0.73 |
| Wawruch et al.  (2016/Slovak Republic) | Retrospective cohort study | IS  (4,319) | 3 years | Antiplatelets | Measured as the time period between the initiation date and the beginning of the treatment gap, if such a gap occurred | 0.73 |
| Wawruch et al.  (2017/Slovak Republic) | Retrospective cohort study | IS  (2,748) | 3 years | Statins | Evaluated by reference to the period  of time during which the drug was continually prescribed in a patient | 0.73 |
| Wawruch et al.  (2017/Slovak Republic) | Retrospective cohort study | TIA  (854) | 3 years | Antiplatelets | Measured as the time period between the initiation date and the beginning of the treatment gap, if such a gap occurred | 0.73 |

Note: IS, ischemic stroke; TIA, transient ischemic attack; IQR, interquartile range.

Table 2. Outcomes of included studies.

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| 1st author  (year, country) | Significant Factors | Extent of Persistence |
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| Budimkic et al. (2016, Serbia) | Persistence  Intravenous thrombolysis | 3 months: 91.3–96.1%  1–7 years: 69–88.7% |
| Burke et al. (2010, USA) | Nonpersistence  Medication copayment of >$40 (vs. copayment of <$20) | 1.5 years of mean follow-up period:  44.8–53.7% |
| Bushnell et al. (2011, USA) | Persistence  Fewer medications prescribed at discharge  Inpatient/Outpatient rehabilitation  Adequate income  History of hypertension or dyslipidemia  Less than college education  Age  Appointment with primary care provider or neurologist | 1 year: 65.9% |
| Bushnell et al. (2010, USA) | Persistence  Age  No history of atrial fibrillation  History of HTN, DM, CAD/prior MI, dyslipidemia  Number of medication classes prescribed  Financial hardship  Hospital regions other than Northeast  Understanding why medications are prescribed, how to refill meds  Quality of life | 3 months: 75.5% |
| Glader et al. (2010, Sweden) | N/A | 4 months: 89.1–96.4%  8 months: 75.0–85.6%  12 months: 65.1–79.3%  16 months: 56.0–71.6%  20 months: 49.2–67.4%  24 months: 45.0–63.7% |
| Ji et al. (2013, China) | Persistence  Male sex  History of hypertension  No history of atrial fibrillation  Index vascular event of acute ischemic stroke (vs. TIA)  Treated in academic center  Length of hospital stay (per day increase)  Number of medications at discharge | 3 months: 63.6% |
| Jiang et al.  (2017, China) | Persistence  Age  History of DM, atrial fibrillation  Higher family income  NIHSS score at admission  Index vascular event of TIA (vs. IS)  Being treated in a stroke unit or in a hospital with more than 80 beds | 3 months: 46.2%. |
| Østergarrd et al. (2012, Denmark) | Nonpersistence  NIHSS score ≥7 (vs. NIHSS score 0–3) | 2.8 years of median follow-up period: 36.0% (overall nonpersistence rate) |
| Østergarrd et al. (2014, Denmark) | Nonpersistence  Age <54 (vs. 55–74)  7+ days TIA onset to hospital contact (vs. 0–1) | 1.7 years of median follow-up period: 23.6% (overall nonpersistence rate) |
| Rijkmans et al. (2018/Netherlands) | Persistence  No significant factors | median 5.5 years of follow-up period or death: 59.6–93.0% |
| Rodriguez et al. (2011, USA) | Persistence  No significant factors | 3 months: 74.8–78.6%  12 months: 61.1–65.1% |
| Sjölander et al. (2012, Sweden) | Persistence  Female sex | 4 months: 88.6-95.8%  2 years: 41.7–76.3% |
| Tsai et al.  (2014, Canada) | Persistence  Providing a prescription before discharge  Prior drug user  Early persistence | 1 year: 79.9–85.8%  2 years: 77.0–81.1% |
| Ullberg et al.  (2017, Sweden) | Persistence  Without stroke unit care  ADL dependency (vs. no dependency)  Without follow-up visit within 90 days after discharge  University education  Non-European origin | 4 months: 89.7%  14 months: 67.9% |
| Wang et al.  (2016, China) | Persistence  In-hospital medical complications (no > yes) | 3 months: 76.3–96.7%  6 months: 79.6–96.4%  12 months: 54.9–72.7% |
| Wawruch et al.  (2016/Slovak Republic) | Nonpersistence  Age ≥75 years  Female sex  Comorbid of DM, dementia, epilepsy  Switch in antiplatelet in follow-up period | Nonpersistence rate  1 year: 11.2%  2 years: 18.7%  3 years: 27.4% |
| Wawruch et al.  (2017, Slovak Republic) | Nonpersistence  Age ≥75 years  Polypharmacy  Comorbid of DM, dementia, hypercholesterolemia, anxiety disorders | Nonpersistence rate  1 year: 21.9%  2 years: 30.6%  3 years: 39.7% |
| Wawruch et al.  (2017, Slovak  Republic) | Nonpersistence  Age ≥75 years  Polypharmacy  Comorbid of hypertension, diabetes, hypercholesterolemia  Switch in antiplatelet in follow-up period | Nonpersistence rate  1 year: 20.6%  2 years: 30.3%  3 years: 40.4% |

Note:HTN, Hypertension; DM, Diabetes; CAD, Coronary Artery Disease; MI, Myocardial infarction; OR, odds ratio; HR, hazard ratio; NIHSS, National Institutes of Health Stroke Scale; ADL, activities of daily living; PR, prevalence ratio.