Opportunities for Rapid Monitoring of New Cancer Treatments: Tyrosine Kinase Inhibitors in the Sentinel Distributed Database

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BACKGROUND

- New cancer therapies are increasingly coming to the market after expedited review processes.
- There is a need for understanding early uptake and safety of these therapies.

OBJECTIVE

- To describe uptake of tyrosine kinase inhibitors (TKIs) in commercially insured populations in the U.S.

METHODS

Data source

- 4 data partners in the Sentinel Distributed Database

Drugs of interest

- 16 TKIs approved between 2011 and 2014

Statistical analysis

- We assessed monthly and cumulative number of users and described treatment episodes from approval date through September 2015.

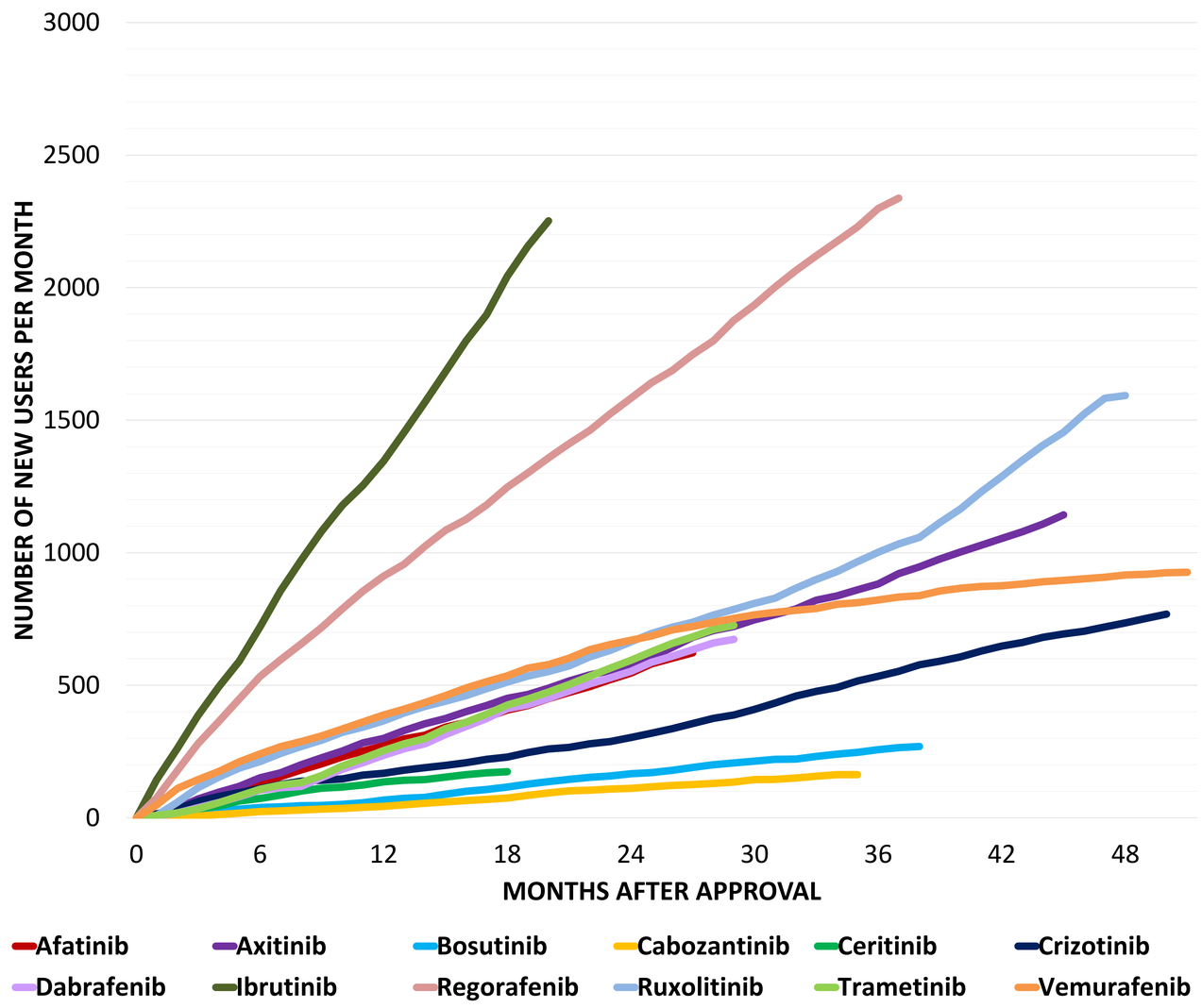
RESULTS

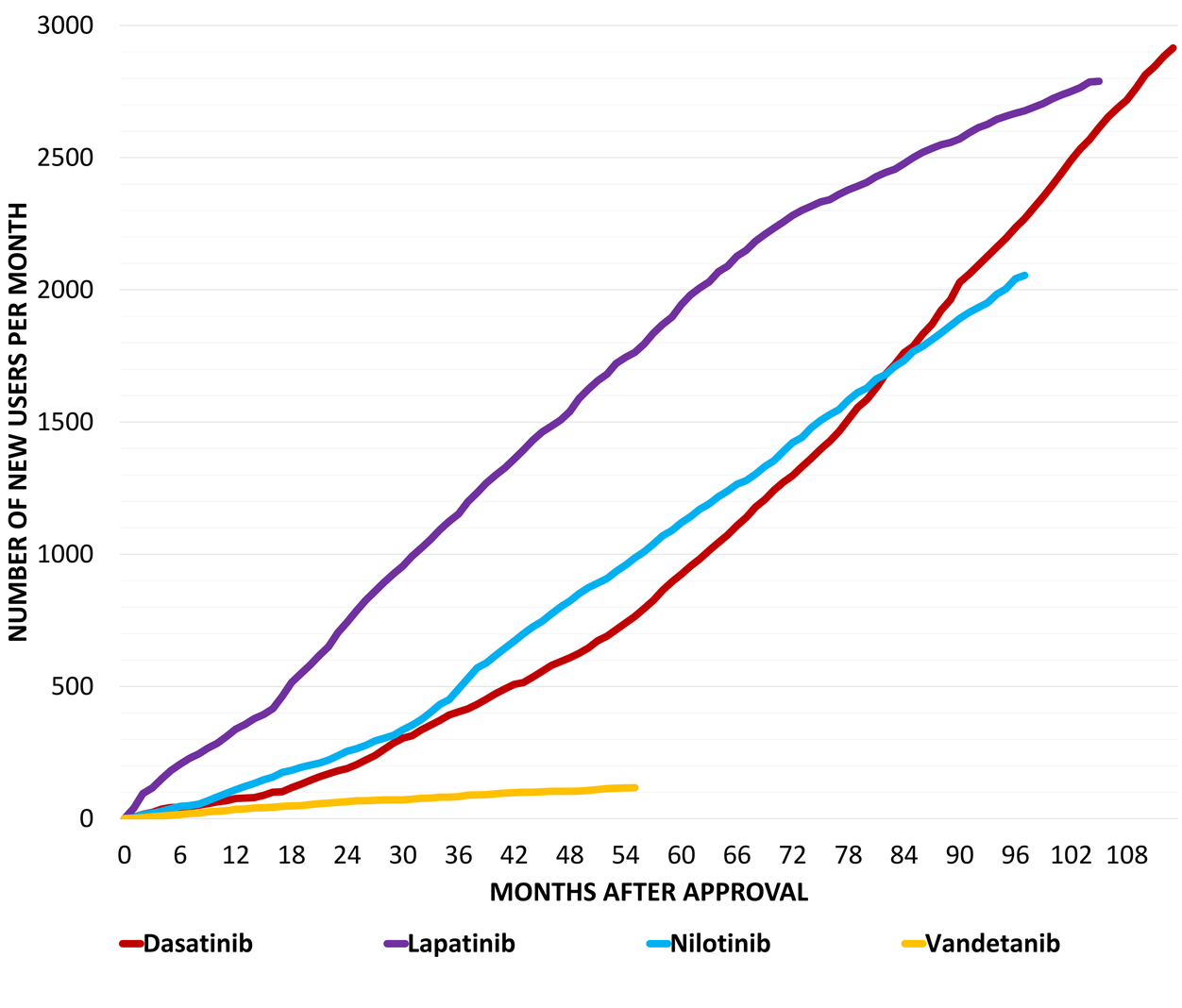
Table 1. Utilization of 16 Tyrosine Kinase Inhibitors in the Sentinel Distributed Database

Generic Name	Number of Months Observed Since Approval	Total Number of Members Exposed[a]	Cumulative Number of Eligible New Users[b] at End of Observation	Median Number of Uncensored Treatment Episodes per New User (Range)	Median Duration [Days] of First Uncensored Episode (Range)	Median Duration [Days] of Gap between First and Second Uncensored Episodes (Range)	Age and Sex of New Users (%), by Generic Name				
							Female	Age <22 Years	Age 22-44 Years	Age 45-64 Years	Age 65+ Years
Afatinib	27	778	622	1 (1, 6)	109 (39, 693)	0 (0, 131)	66	0	4	35	61
Axitinib	45	1,390	1,143	1 (1, 8)	113.5 (11, 830)	0 (0, 384)	26	0	3	48	48
Bosutinib	38	339	269	1 (1, 7)	90 (28, 703)	1 (0, 467)	51	0	13	42	45
Cabozantinib	34	200	163	1 (1, 15)	60 (2, 667)	0 (0, 222)	36	2	10	53	35
Ceritinib	18	204	174	1 (1, 5)	85 (14, 347)	0 (0, 123)	52	1	13	47	39
Crizotinib	50	979	768	1 (1, 8)	131.5 (24, 1181)	0 (0, 440)	52	2	10	46	42
Dabrafenib	29	850	673	1 (1, 7)	96 (33, 545)	1 (0, 521)	38	1	16	43	41
Dasatinib	113	4,622	2,915	2 (1, 26)	100 (4, 2561)	0 (0, 2123)	45	4	20	42	34
Ibrutinib	20	2,995	2,252	1 (1, 5)	93 (16, 591)	0 (0, 359)	36	0	1	23	76
Lapatinib	105	4,251	2,789	2 (1, 14)	94 (4, 1,444)	1 (0, 1616)	97	0	16	60	24
Nilotinib	97	3,108	2,055	2 (1, 34)	86 (16, 2194)	0 (0, 1203)	48	1	19	41	39
Regorafenib	37	2,797	2,337	2 (1, 10)	58 (11, 846)	0 (0, 677)	44	0	6	44	49
Ruxolitinib	48	2,053	1,593	2 (1, 11)	120 (23, 1244)	0 (0, 770)	46	0	3	23	73
Trametinib	29	904	726	1 (1, 7)	94 (24, 546)	0 (0, 138)	38	1	16	44	39
Vandetanib	55	161	117	1 (1, 11)	116 (46, 1,111)	0 (0, 450)	41	2	15	50	32
Vemurafenib	51	1,162	926	1 (1, 10)	90 (24, 762)	0 (0, 1181)	36	1	13	45	40

[a] Exposed members were excluded from analyses for the following reasons: lack of data on date of birth, gender; age, dispensings, episodes, coverage not consistent with prespecified criteria; [b] new users defined as members with medical and drug or drug only coverage, without dispensings of products in question for 183 days

Figure 1. Cumulative Number of New Users Following Approval of 16 Tyrosine Kinase Inhibitors in the Sentinel Distributed Database





CONCLUSIONS

- Sentinel captures large numbers of exposed patients in close to real-time post approval.
- These analyses are restricted to commercially insured members, underrepresenting patients age 65 and older.
- Further development of Sentinel tools is warranted to assess uptake and safety of new cancer therapies.

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