TRENDS-in-MEDICINE

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by Lynne Peterson

Quick Takes

…Highlights from this week's news relating to drugs and devices in development that are not covered in other *Trends-in-Medicine* reports…

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NOTE: For full coverage of the European Association for the Study of the Liver (EASL), subscribe to ***Trends-in-Medicine***.

SHORT TAKES

- **AVEO PHARMACEUTICALS and ASTELLAS PHARMA's tivozanib –** Aveo said it plans to submit this renal cancer drug to the FDA in 3Q12.

- **BAXTER and HALOZYME THERAPEUTICS' HyQ (immunoglobulin using hyaluronidase enzyme technology) –** The FDA requested more information on long-term use of this investigational drug that uses Halozyme technology to allow the immunoglobulin to be delivered by injection rather than intravenously. And the Agency indicated HyQ will have to go before an advisory committee.

- **Biodegradable coronary stents –** A 50-patient, single-center, Japanese study published in ***Circulation*** found that fully biodegradable stents are safe. Major complications with **Kyoto Medical Planning's Igaki-Tamai** stents were comparable to bare metal stents, and the biodegradable stents disappeared from arteries within three years.

- **CELLCEUTIX's Prurisol (KM-133) –** The FDA has agreed to a pre-IND meeting with the company in mid-June to discuss this investigational psoriasis drug, which Cellceutix hopes to get approved via the 505(b)(2) pathway.

- **COLLPLANT's Vergenex –** The FDA is requiring a premarket application (PMA) for this wound dressing matrix to treat recurrent wounds. The company said it has already started the clinical trial needed for a PMA.

- **ENDOCYTE's vintafolide (EC-145) –** The company said **Merck** will help develop and market this drug, which is in Phase III in combination with doxorubicin in ovarian cancer and in Phase II in non-small cell lung cancer (NSCLC). Merck plans to test it in other cancers as well. The two ongoing studies are also evaluating an experimental diagnostic agent, etarfolatide (EC-20), to help identify responders to vintafolide.

- **FIVE PRIME THERAPEUTICS**, a biotechnology company, has entered into a drug discovery collaboration with **GlaxoSmithKline**, which gives GSK exclusive access to therapeutic drugs developed by Five Prime for refractory asthma and chronic obstructive pulmonary disease (COPD).

- **GLAXOSMITHKLINE's** offer to buy **Human Genome Sciences** was rejected, and Human Genome Sciences plans to explore other strategic alternatives, including the possible sale of the company.

- **INSPIRATION BIOPHARMACEUTICALS' IB-1001** – A biologics license application (BLA) was filed with the FDA for this intravenous recombinant Factor IX product for the treatment and prevention of bleeding in patients with hemophilia B.

- **Isotretinoin** – A study published in the ***Archives of Dermatology*** found that this drug for severe acne doubles the risk of developing problems with the eyes, including conjunctivitis and dry eye.

- **JOHNSON & JOHNSON's canagliflozin** – A 451-patient study published in the journal ***Diabetes Care*** found that this SGLT2 inhibitor for Type 2 diabetes was an effective add-on strategy for patients whose glucose levels were not adequately controlled on metformin. In addition, patients lost weight and had a low hypoglycemic risk.

- **NOVARTIS' Gilenya (fingolimod)** – More bad news: A case of progressive multifocal leukoencephalopathy (PML) has been reported in a Gilenya patient. However, this patient was also taking **Biogen Idec/Elan's Tysabri** (natalizumab), so the role of Gilenya is unclear.

- **NOVO NORDISK's Victoza (liraglutide)** – Public Citizen petitioned the FDA to withdraw this Type 2 diabetes drug from the market, citing the risk of kidney failure, thyroid cancer, or pancreatitis. Public Citizen also criticized Curtis Rosebraugh, MD, director of the FDA's Office of Drug Evaluation II, Center for Drug Evaluation and Research (CDER), for approving Victoza in the first place. *This petition is unlikely to be successful; in fact, if the results of the ongoing cardiovascular outcomes trial are positive, Victoza may get an improved label, and Novo Nordisk is expected to submit it to the FDA for approval to treat obesity.*

- **Omega-3 fatty acids** – A randomized, double-blind, placebo-controlled, 92-patient study reported in the ***Archives of Neurology*** by Norwegian researchers found that omega-3 fatty acids (1350 mg EPA + 850 mg DHA daily) were not helpful in treating multiple sclerosis, either alone or in combination with interferon beta-1a. The diet supplement did not reduce brain lesions on MRI or the relapse rate over the two-year follow-up period.

- **OXFORD BIOMEDICA's ProSavin** – The company said that this gene-based therapy for Parkinson's disease met the primary safety endpoint in a Phase I/II trial and that patients taking the highest of the three doses tested had a 30% improvement in motor function.

- **PIRAMAL HEALTHCARE** is buying a research and development portfolio from **Bayer** that gives Piramal the rights to florbetaben, an imaging agent for identifying beta-amyloid plaques in the brains of Alzheimer's disease patients.

- **ROCHE** is giving up in its attempt to buy **Illumina**, which had fought the acquisition. Roche expressed concern that the company's gene-mapping technology may soon be outdated and no longer industry-leading, becoming eclipsed by faster, cheaper gene-sequencing instruments from **Oxford Nanopore Technologies** or **Life Technologies**.

- **SXC HEALTH SOLUTIONS** is buying **Catalyst Health Solutions**, another mid-size benefits manager.

- **SYNAIRGEN RESEARCH's SNG-001 (inhaled interferon beta)** – A study found that this antiviral agent prevented two-thirds of asthmatics from worsening symptoms after catching the common cold. The researchers suggested the drug could help up to 20% of asthmatics who are most at risk of life-threatening complications from their condition.

NEWS IN BRIEF

ABBOTT's levodopa-carbidopa intestinal gel (LCIG) – reduces "off" time in advanced Parkinson's disease

The results of a 71-patient, double-blind Phase III trial – to be presented at the **American Academy of Neurology** meeting this week – indicate this levodopa-carbidopa formulation, which is infused through a portable pump connected to a tube implanted in the intestine (similar to a feeding tube), works better than standard oral levodopa-carbidopa in reducing "off" time in patients with advanced Parkinson's disease (less tremor, slowness, stiffness, walking difficulty) by ~2 hours/day.

AMGEN

- **Enbrel (etanercept).** In a study published in the ***Annals of Internal Medicine***, Enbrel failed to show more efficacy than steroids or placebo in relieving subacute sciatica (leg pain) at 1 month. At six months, there was still no significant benefit to Enbrel.

- **Xgeva (denosumab).** An *exploratory* analysis of just the 811 lung cancer patients in a large trial in multiple cancer types, presented at the European Lung Cancer Conference, found that Xgeva significantly prolonged survival vs. Novartis' Zometa (zoledronic acid) – by 1.2 months (8.9 months vs. 7.7 months, HR 0.80, p=0.01).

  - There was a survival advantage to Xgeva in:

    √ Non-small cell lung cancer (9.5 months vs. 8.0 months, HR 0.78, p=0.0104).

    √ Squamous-cell carcinoma (HR 0.68, p=0.0350).

- There was ***not*** a statistically significant survival advantage to Xgeva in:
  - √ Small cell lung cancer, (7.6 months vs. 5.1 months, HR 0.81, p=0.358).
  - √ Adenocarcinoma (HR 0.80, p=0.0751).

However, the discussant said subgroup analyses like this should meet a higher standard, p<0.01. By that standard, Xgeva did not significantly extend survival in any subgroup.

EISAI's perampanel – positive Phase III data in epilepsy

A 13-week, double-blind, placebo-controlled, 706-patient Phase III trial published in ***Neurology*** found that this investigational glutamate receptor antagonist reduced seizure frequency in refractory epilepsy vs. placebo at the two highest doses (-23.3% at 4 mg/day and -30.8% at 8 mg/day vs. -10.7% for placebo). In addition, significantly more patients on perampanel achieved ≥50% reduction in seizure frequency vs. placebo (28.5% and 34.9% vs. 17.9%). However, outcomes for patients in the 2 mg/day group didn't differ significantly from placebo. Treatment-related adverse events were mostly mild-to-moderate, with dizziness and somnolence the most common adverse events. And the drug did not appear to affect plasma concentrations of other common anti-epilepsy drugs, though some epilepsy drugs can lower plasma concentrations of perampanel.

MERCK SERONO's Rebif HSA-free (human serum albumin-free interferon beta-1a) – earlier is better

A Phase III study to be presented at the American Academy of Neurology meeting this week found that multiple sclerosis patients who were injected with this Rebif formulation – which is not approved in the U.S. – at the first signs of the disease (e.g., tingling, numbness, muscle weakness, balance problems + 2 lesions on MRI) were less likely to progress to clinically definite MS than people who later switched to Rebif HSA-free from placebo. The 517-patient REFLEXION trial found that for patients who got placebo for two years followed by one year of Rebif HSA-free vs. patients who got Rebif HSA-free three times a week for the entire three years:

- The probability of being diagnosed with clinically definite MS at the end of the three years was 41% for patients who started on placebo vs. 28% for patients who took Rebif HSA-free the entire three years.
- 87% of patients who started on placebo met McDonald criteria for an MS diagnosis at the end of Year 3 vs. 67% of patients on Rebif HSA-free for all three years.

ONO PHARMACEUTICAL's ONO-4641 – positive Phase II data in MS

In a 407-patient Phase II trial to be presented at the American Academy of Neurology meeting this week, this oral multiple sclerosis drug significantly reduced the number of Gd+ brain lesions at 26 weeks vs. placebo: 82% fewer with 0.05 mg, 92% fewer with 0.10 mg, and 77% fewer with 0.15 mg. Adverse events included cardiovascular events (e.g., slower heartbeat, blood pressure changes, and AV block), ALT elevations, and up to 4% Grade 4 lymphopenia. *Besides the toxicity, the question may be the lack of a dose response curve.*

ORBUSNEICH's Genous Stent – re-endothelialization shown

A case report published in the ***Journal of Invasive Cardiology*** showed by optical coherence tomography (OCT) that this metal stent – which is coated with a substance that attracts and captures endothelial progenitor cells (EPC) – achieves full strut coverage and endothelialization two weeks after percutaneous coronary intervention (PCI), making it a good choice for patients requiring urgent surgery shortly after PCI. The Korean investigators said the findings allowed them to end dual antiplatelet therapy in these patients at two weeks.

Prostate cancer radiotherapy – benefit to IMRT but not proton therapy

Intensity-modulated radiation therapy (IMRT) – but not proton therapy – offers better disease control than standard radiation therapy, researchers reported in the ***Journal of the American Medical Association***. Using Medicare SEER data, the researchers found that men who had IMRT (e.g., **Varian Medical System's SmartBeam**) were less likely to need additional cancer therapy (RR 0.81), have gastrointestinal comorbidities (RR 0.91), or have hip fractures (RR 0.78) vs. conformal radiation therapy.

However, IMRT patients were more likely to have erectile dysfunction (RR 1.12). There was no mortality benefit and no reduction in additional cancer therapy with proton therapy [e.g., **Hitachi Medical Systems America's Proton Beam Therapy System** (PROBEAT)] vs. IMRT, and proton therapy patients had a higher risk of GI morbidity. Proton therapy wasn't better than IMRT in terms of urinary incontinence, erectile dysfunction, or hip fractures, either.

The researchers concluded, "Overall, our results do not clearly demonstrate a clinical benefit to support the recent increase in proton therapy use for prostate cancer." *FYI: IMRT use was 0.15% in 2000 but 95.9% in 2009.*

The study was limited by its use of claims data, which are subject to reporting bias, but the researchers noted that a comparative trial between IMRT and proton therapy would require many years to get results and that the SEER-Medicare data represent "an important data source with an established methodology for comparative effectiveness research."

ROCHE/GENENTECH

- **Avastin (bevacizumab).** A study published in the ***Journal of the American Medical Association*** found that Avastin did not significantly prolong survival in older patients (age ≥65) with lung cancer, raising questions about whether Medicare should cover it.
- **Herceptin (trastuzumab).** A meta-analysis published in the ***Cochrane Database of Systematic Reviews*** found Herceptin prolonged survival in women with HER2-positive early breast cancer, but this came at the cost of significant cardiotoxicity. With Herceptin, overall survival was 34% better, and disease-free survival (DFS) was 40% better ($p<0.00001$ for both) but raised the risk of congestive heart failure more than five-fold.

Type 2 diabetes – new position statement

The European Association for the Study of Diabetes (EASD) and the American Diabetes Association (ADA) issued a joint position statement on the treatment of hyperglycemia Type 2 diabetics that will be published jointly in ***Diabetologia*** and ***Diabetes Care***. The statement:

- Calls for a more patient-centered approach.
- Details the evidence on the available drug.
- Urges personalized diabetes education for patients, focusing on diet and exercise.

REGULATORY NEWS

FDA drug watch list

Each quarter the FDA issues a list of drugs it is monitoring because of ***potential*** signs of serious risks or new safety information in the Agency's Adverse Event Reporting System (AERS) database. Items of interest among the 16 drugs on the list are:

- **ACTELION PHARMACEUTICALS' Ventavis (iloprost) –** hemoptysis.
- **BAYER and ONYX PHARMACEUTICALS' Nexavar (sorafenib) –** osteonecrosis of the jaw.
- **Fluoroquinolone products –** peripheral sensorimotor neuropathy. The FDA is evaluating whether the current labeling is adequate.
- **FOREST LABORATORIES' Savella (milnacipran) –** homicidal ideation. *Remember, in 2010 Public Citizen sought to get Savella withdrawn for adverse events such as suicidal ideation.*
- **Gadolinium-based contrast agents –** acute kidney injury. The FDA is evaluating whether the current labeling is adequate.
- **PFIZER's Neurontin (gabapentin) –** creatinine increases and rhabdomyolysis.
- **Proton pump inhibitors (PPIs), over-the-counter –** *Clostridium difficile*-associated diarrhea.
- **SAVIENT PHARMACEUTICALS' Krystexxa (pegloticase) –** anaphylaxis and infusion reactions.
- **SEATTLE GENETICS' Adcentris (brentuximab) –** progressive multifocal leukoencephalopathy (PML).
- **VERTEX PHARMACEUTICALS' Incivek (telaprevir) –** serious skin reactions, including drug reaction with eosinophilia and systemic symptoms (DRESS) and Stevens-Johnson syndrome (SJS).

FDA told to upgrade its IT

The Government Accountability Office (GAO) issued a report that said the FDA is way behind in its internal information technology (IT) infrastructure and needs to develop a a plan for a "major modernization" and assess how the Agency could improve its information-sharing.

New legislation proposed to reform FDA

Two Republican senators – Sen. Richard Burr (R-NC) and Sen. Tom Coburn (R-OK) – introduced legislation to reform the FDA. The PATIENTS' FDA Act is designed to "significantly improve" the FDA's regulation of drugs and medical devices. The bill would make changes in six areas:

- Improving transparency and accountability in FDA decision-making.
- Recalibrating risk:benefit considerations.
- Reducing unnecessary delays and regulatory burdens.
- Improving the way the FDA gains outside expertise.
- Medical-device regulatory improvements.
- Improving the FDA's internal management.

FDA approvals/clearances

- **CUSTOM SPINE's Securis**, a minimally invasive pedicle screw system, received 510(k) clearance.
- **DEVON MEDICAL PRODUCTS' extriCARE 2400**, a pump system that uses negative pressure to treat wounds and diabetic/pressure ulcers, flaps, and grafts, was granted 510(k) clearance.
- **QIAGEN**
  - **Rotor-Gene Q MDx**, an automated real-time PCR instrument, received 510(k) clearance.
  - **artus Infl A/B RG RT-PCR Kit**, an *in vitro* diagnostic test to aid in diagnosis of influenza A and B, received 510(k) clearance for use with Roto-Gene Q MDx.
- **QUEST DIAGNOSTICS' Simplexa C. difficile Universal Direct Test** with the 3M Integrated Cycler, a rapid test for hospitals and laboratories to identify *C. difficile*, was given 510(k) clearance.
- **SHL TELEMEDICINE's Smartheart** device, which lets patients use a mobile phone's Bluetooth connection to remotely send their 12-lead ECG data and rhythm strip to a doctor in real time, received 510(k) clearance.
- **SOTERA WIRELESS' ViSi Mobile Monitor**, a portable device for continuous monitoring of an adult patient's vital signs, received 510(k) clearance.
- **SYNCARDIA SYSTEMS' Total Artificial Heart** was granted a humanitarian use device (HUD) designation for use in end-stage biventricular heart failure patients who aren't eligible for heart transplants. The device already has premarket approval for use as a bridge-to-transplant in patients eligible for a transplant.

FDA recalls/warnings

- **HOSPIRA's morphine sulfate injection** – one lot of these pre-filled glass cartridges was recalled because of a customer's report of two **Carpuject Syringes** with more than the 1 mL fill volume.
- **NOVARTIS' Tekturna (aliskiren)** – The FDA issued a warning about this renin inhibitor for blood pressure reduction – as well as all other aliskiren-containing products – saying there is an increased safety risk when they are given concomitantly with ACE inhibitors or angiotensin receptor blockers (ARBs) in patients with diabetes or renal impairment. The labels for all the products are being updated to include new information from the ALTITUDE trial.
- **PHARMACEUTICAL INNOVATIONS' Other-Sonic Generic Ultrasound Transmission Gel** – All lots of this product were seized by the FDA after an FDA analysis found that product samples contained dangerous bacteria (*Pseudomonas aeruginosa* and *Klebsiella oxytoca*). The FDA also said the gel was also misbranded because it is dangerous to health when used in the manner suggested in the labeling. The FDA had received reports of 16 surgical patients who were infected with the bacteria after undergoing transesophageal ultrasound procedures using the gel in connection with heart valve surgery.

European regulatory actions

- **ITGI MEDICAL's AneuGraftNx**, a pericardium-covered stent, was given a CE Mark to treat intracranial aneurysms and other neurological conditions.
- **JOHNSON & JOHNSON** – European regulators gave their approval for J&J to buy **Synthes** now that J&J has agreed to sell its **DePuy Orthopaedics Trauma** business to **Biomet**.
- **ST. JUDE MEDICAL's Ellipse** – A smaller version of this implantable cardioverter defibrillator (ICD) received a CE Mark.

National Institute for Clinical and Health Excellence (NICE) news

ROCHE/GENENTECH's Avastin (bevacizumab) – NICE found Avastin doesn't meet its cost criteria for extending the lives of breast cancer patients vs. capecitabine and should not be used first line.

Regulatory news from other countries

Japan: **ST. JUDE MEDICAL's Trifecta**, a smaller aortic valve with leaflets of bovine and porcine pericardial tissue fastened to the valve stent's outer surface, was approved.

Upcoming FDA Advisory Committees and Other Regulatory Meetings of Interest (*items in RED are new since last week*)		
Date	**Topic**	**Committee/Event**
	April 2012	
April 25	**Takeda's alogliptin**, a DPP-4 for Type 2 diabetes	PDUFA date
April 25	**HeartWare's HVAD** left ventricular assist device	FDA's Circulatory System Devices Advisory Committee
April 26	**Amgen's Xgeva** (denosumab) for prevention/delay of bone metastases in castration-resistant prostate cancer	PDUFA date
April 26	**Boston Scientific/Cameron Health's S-ICD**, a lead-less implantable cardioverter defibrillator	FDA's Circulatory System Devices Advisory Committee
April 27	**Salix Pharmaceuticals and Progenics Pharmaceuticals' Relistor** (methylnaltrexone injection) for opioid-induced constipation	PDUFA date
April 29	**Vivus' avanafil** for erectile dysfunction	PDUFA date
April 30	**Baxter and Halozyme's HyQ** for immunodeficiency	PDUFA date
	May 2012	
May 1	**Protalix Biotherapeutics' Uplyso** (taliglucerase alfa), an investigational Gaucher disease drug	PDUFA date
May 4	**Alexza Pharmaceuticals' Adasuve** (loxapine inhalation powder) for the acute treatment of agitation associated with schizophrenia/bipolar I disorder	PDUFA date
May 6	**GlaxoSmithKline's Votrient** (pazopanib) to treat sarcoma	PDUFA date
May 8	**Regeneron Pharmaceuticals' Arcalyst** (rilonacept), an interleukin-1 inhibitor to prevent gout flares during initiaton of uric acid-lowering therapy	FDA's Arthritis Advisory Committee
May 9	**Pfizer's tofacitinib**, an oral JAK inhibitor, to treat rheumatoid arthritis	FDA's Arthritis Advisory Committee
May 10	**Gilead Sciences' Truvada** (emtricitabine + tenofovir) for HIV prevention	FDA's Antiviral Drugs Advisory Committee
May 10	**Arena Pharmaceuticals and Eisai's Lorqess** (lorcaserin) for obesity	FDA's Endocrinologic and Metabolic Drugs Advisory Committee
May 10-11	**Trial design for obesity devices** (balloons, suture devices, bands, space-occupying devices, etc.), studies, and discussion of what is clinically meaningful weight loss	FDA's Gastroenterology and Urology Devices Advisory Committee
May 11	**Gilead Sciences' Quad** (emtricitabine + tenofovir + elvitegravir + cobicistat) for HIV	FDA's Antiviral Drugs Advisory Committee
May 13	**Talon Therapeutics' Marqibo** (vincristine sulfate liposomes injection) for Philadelphia chromosome-negative acute lymphoblastic leukemia (ALL)	PDUFA date
May 15	**OraQuick's In-Home HIV test**	FDA's Blood Products Advisory Committee
May 16-17	**Natural history studies of rare diseases:** meeting the needs of drug development and research	FDA workshop
May 23	**Johnson & Johnson's Xarelto** (rivaroxaban), an anticoagulant for a supplemental indication in acute coronary syndrome (ACS)	FDA's Cardiovascular and Renal Drugs Advisory Committee
May 24	**St. Jude Medical's Amplatzer** and **Gore's Helex ASD Occluder** for atrial septal defect closure – discussion of current safety and effectiveness for these devices, first approved in 2001 and 2006, respectively	FDA's Circulatory System Devices Advisory Committee
May 24	**Pfizer/FoldRx Pharmaceuticals' Vyndaqel** (tafamidis meglumine) for the treatment of transthyretin (TTR) familial amyloid polyneuropathy	FDA's Peripheral and Central Nervous System Drugs Advisory Committee
May 30-31	Discussion of **analgesic treatment of chronic pain** – mechanisms, epidemiology, new data on opioid efficacy, etc.	FDA public workshop

Upcoming FDA Advisory Committees and Other Regulatory Meetings of Interest (*items in RED are new since last week*)		
Date	**Topic**	**Committee/Event**
June 2012		
June 5	**Salix Pharmaceuticals' crofelemer** for HIV-related diarrhea	PDUFA date
June 5	**Merck/Ariad Pharmaceuticals' Taltorvic** (ridaforolimus) for sarcoma	PDUFA date
June 8	**Forest Laboratories and Ironwood Pharmaceuticals' linaclotide** for IBS-C	PDUFA date
June 8	**Roche/Genentech's pertuzumab** in HER2+ advanced breast cancer	PDUFA date
June 13	**Edwards Lifesciences' Sapien** transcatheter aortic valve repair (TAVR), an expanded indication for high-risk, operable patients	FDA's Circulatory System Devices Advisory Committee
June 15	**Gilead Sciences' Truvada** (emtricitabine + tenofovir) for HIV prevention	PDUFA date
June 21	**Dune Medical Devices' MarginProbe System**, which uses electro-magnetic waves to characterize human tissue in real time and provides intraoperative information on a malignancy of the surface of an *ex vivo* lumpectomy specimen	FDA's General and Plastic Surgery Devices Advisory Committee
June 25	**QRxPharma's MoxDuo** (morphine + oxycodone) for pain	PDUFA date
June 26	**Edwards Lifesciences' Sapien** transcatheter aortic valve	CMS final NCD expected
June 27	**Arena Pharmaceuticals and Eisai's Lorqess** (lorcaserin) for obesity	PDUFA date
June 27-28	Risk:benefit of **metal-on-metal hip replacement** and **resurfacing**	FDA's Orthopaedic and Rehabilitation Devices Advisory Committee
June 28	**Bristol-Myers Squibb's Eliquis** (apixaban), an anticoagulant for the prevention of stroke in AFib	PDUFA date
June 29	**Astellas Pharma's mirabegron** for treatment of overactive bladder	PDUFA date
Other 2012		
July 17	**Vivus' Qnexa** (phentermine + topiramate) for weight loss	PDUFA date
July 26	**Amarin's AMR-101** (omega-3 fish oil EPA) to treat hypertriglyceridemia	PDUFA date
July 26	**Horizon Pharma's Lodotra** (low-dose prednisone) for rheumatoid arthritis	PDUFA date
July 27	**Onyx Pharmaceuticals' carfilzomib** for multiple myeloma	PDUFA date
July 30	**Regeneron's Arcalyst** (rilonacept) for gout	PDUFA date
July 30	**Almirall and Forest Laboratories' aclidinium** inhaled therapy for chronic obstructive pulmonary disease (COPD)	PDUFA date
August 4	**Regeneron Pharmaceuticals** and **Sanofi's Zaltrap** (aflibercept) for colon cancer	PDUFA date
August 21	**Pfizer's tofacitinib**, an oral JAK2 inhibitor for rheumatoid arthritis	PDUFA date
August 27	**Gilead Sciences' Quad** (emtricitabine + tenofovir + elvitegravir + cobicistat) for HIV	PDUFA date
September 10	**Navidea Biopharmaceuticals' Lymphoseek**, a radioactive agent for tracing lymph nodes in cancer patients	PDUFA date (extended from June 10)
October 21	**Impax Laboratories' IPX-066** for Parkinson's disease	PDUFA date
October 29	**Cornerstone Therapeutics' CRTX-800** to treat hyponatremia	PDUFA date