Evaluate Vantage

April 13, 2017

For $300m Biogen beefs up its Alzheimer's attack

Jonathan Gardner

Biogen's decision to spend $300m to license in a phase I anti-tau antibody from Bristol-Myers Squibb shows that repeated failure seems to be no impediment to continued development of Alzheimer's disease projects.

The deal brings to five the number of assets for the neurodegenerative condition held by the Massachusetts-based biotech, and its second project targeting tau deposits rather than amyloid plaques (see table below). Meanwhile, Bristol signalled its withdrawal from Alzheimer's development, and in so doing sold at a profit an agent it bought with Ipierian for $175m three years ago (*Development-stage M&A premiums reward very patient investors, May 7, 2014*).

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The Alzheimer's project is BMS-986168; it has completed phase I safety studies, and is ready for phase II in Alzheimer's and progressive supranuclear palsy. In Biogen's pipeline it will join the phase III sset aducanumab, phase I BIIB076, and the Eisai-partnered elenbecestat, and BAN2401.

While aducanumab and the Eisai collaborations all seek to inhibit the neural damage caused by accumulation of amyloid plaques, BIIB076 and the Bristol project target a second protein, tau, that is deposited in the brains of Alzheimer's patients and is also thought to contribute to the condition. In tau inhibition, Biogen recently put BIIB076 into phase I, according to the project's originator, Switzerland-based Neurimmune; both '076 and '168 are antibodies.

In this space Abbvie has a slight lead – it initiated a phase II trial in January for ABBV-8E12 in early Alzheimer's disease, and this will enrol 400 patients and measure disease progression over two years. Presumably Biogen's assets will follow a similar strategy.

Clinical stage tau-targeting Alzheimer's disease projects		
	Project	**Company**
Anti-tau MAb		
Phase II	ABBV-8E12	Abbvie/C2N Diagnostics
Phase I	BIIB076	Biogen
	BMS-986168	Biogen/Bristol-Myers Squibb
	Tau MAb Research Program	Lilly
	RG6100	Roche
Anti-tau pS422 MAb		
Phase I	RG7345	Roche/AC Immune
Anti-tau vaccine		
Phase I	ACI-35	Johnson & Johnson/AC Immune
Beta-amyloid, tau & alpha-synuclein aggregation inhibitor		
Phase I	NPT088	Proclara Biosciences
Tau aggregation inhibitor		
Phase III	LMTX	Bayer/TauRX Pharmaceuticals
Phase II	PBT2	Prana Biotechnology
Phase I	AADvac2	Axon Neuroscience
Tau protein modulator		
Phase II	AADvac1	Axon Neuroscience

Biogen's development strategy appears to be to cover the waterfront with mechanisms of action. And with '168 it also has the advantage of using orphan drug regulation to speed to market early while Alzheimer's data mature. Progressive supranuclear palsy is estimated to affect between three and six in 10,000.

Making deals

Bristol, meanwhile, has profited today from pipeline optimisation efforts. It also sold rights to BMS-986089 (myostatin adnectin), a fusion protein blocking-myostatin, in development for Duchenne muscular dystrophy, to Roche, for $170m.

Both of these deals appear sensible. Bristol is a small player in neurological diseases, deriving just $13m a year from central nervous system drugs, according to *EvaluatePharma*. Alzheimer's is a huge market, but is also one of the highest-risk therapy areas, with billions of dollars spent on failed clinical trials in recent years.

And while Duchenne has shown itself to be a more favourable area of development thanks to Sarepta's Exondys 51, '089 is probably better placed in the pipeline of Roche, which could be looking to build its CNS commercial presence now that its multiple sclerosis therapy Ocrevus is approved.

With Bristol investors likely looking for the group to make some strategic moves to offset Opdivo's disappointment in first-line lung cancer, an extra $470m could come in handy if it goes into deal-making mode.

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