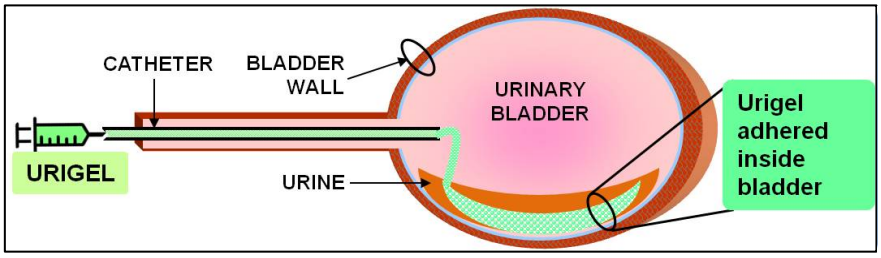
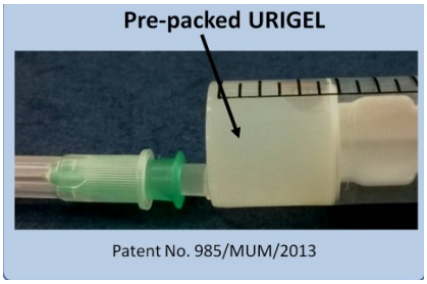
Urigel platforms for bladder diseases

Over-active bladder is highly prevalent affecting around 15 million of the geriatric population in India. Despite its high rate of occurrence, it is predominantly under treated . Current treatment involves highly invasive and expensive submucosal intra-detrusor injection of Botulinum toxin through cystoscopy.

Over 1.25 million patients in India have interstitial cystitis which causes intractable bladder pain and there are no treatments currently available for the same. The incidence of bladder cancer is also rising and shows high recurrences. Current therapy for bladder diseases involves invasive surgeries with repeated catheterisations, invariably leading to scarring and secondary infections. Only a fraction of the drug reaches the bladder via intravenous or oral routes, and drugs instilled via catheter are washed out during urination and cannot penetrate into bladder wall. Thus, there is a crucial need for drug delivery systems that can maximise the time that drugs are retained in the urinary bladder.





The technology developed is Urigel which is a smart biodegradable platform which triggers smart gelation within the urinary bladder. Urigel maximises retention of drugs intravesically for treatment of bladder diseases, such as cystitis, cancer and overactive bladder. It acts as a platform technology to increase adherence on the bladder wall, minimise drug washout during urine voiding, and prolong drug localisation inside the bladder. The Urigel platform is affordable, minimally invasive and can deliver various drugs to treat bladder diseases effectively.

The technology has been developed and validated in small animal models. It is ready for scale up preclinical toxicology and clinical trials. A patent has been filed and another one is pending. The technology is the recipient of the first prize in Medical Technologies category at the AIT India-Switzerland Innovation Challenge 2016.

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