It would be desirable to provide improved methods for treating patients suffering from bladder pain and irritative voiding symptoms. In particular, it would be desirable to provide a means for providing a sustained treatment effect for several days or weeks or more beyond the active treatment period.

Summary

Improved methods of treating a patient having bladder pain and/or irritative voiding symptoms are provided. In one embodiment, the method includes administering to the patient's bladder lidocaine or another anesthetic agent continuously over a treatment period of 24 hours or more in an amount effective to achieve a therapeutic effect which is sustained beyond the end of the treatment period, as it has been discovered that a sustained treatment effect of bladder pain and irritative voiding symptom beyond the end of the active treatment period can be achieved by providing continuous intravesical treatment with lidocaine. Essentially any means of delivering the lidocaine into the bladder can be used so long as provides therapeutically effective amounts of lidocaine to the bladder continuously over the treatment period of 24 hours or more. The continuous lidocaine treatment over multiple days is also effective to improve bladder mucosal abnormalities (pathological and inflammatory features). This method of treatment not only provides the patient with pain relieve and a reduction in urgency during the treatment period, but also surprisingly provides an extended benefit well beyond the end of treatment. In another aspect, a method of treating a patient having bladder pain and/or irritative voiding symptoms is provided that includes administering lidocaine to the patient in an amount effective to achieve a measurable plasma concentration of lidocaine in the patient continuously over a treatment period of at least 24 hours.

In one aspect, there is provided a device for administering an anesthetic or analgesic agent continuously to a patient's bladder, the device comprising: an elastic device body which comprises an anesthetic or analgesic agent, wherein the device body is configured to provide continuous controlled release of the anesthetic or analgesic agent over a treatment period of 24 hours or more in an amount effective to achieve a therapeutic effect which is sustained beyond the end of the treatment period.

In another aspect, there is provided a device or composition for administering an anesthetic or analgesic agent continuously to a patient's bladder over a treatment period of 24 hours or more in an amount effective to achieve a therapeutic effect which is sustained beyond the end of the treatment period.

Brief Description of the Drawings

FIG. 1 is a plan view of an embodiment of a drug delivery device.

FIG. 2 is a plan view of the drug delivery device shown in **FIG. 1**, illustrating the drug delivery device inside a deployment instrument.

FIG. 3 is a cross-sectional view of the drug delivery device shown in **FIG. 1**, taken along line **3-3** in **FIG. 1**.

FIG. 4 is an illustration showing the size of an embodiment of a drug delivery device in comparison to an approximation of the bladder trigone region.

FIG. 5 illustrates examples of shapes for a retention frame of a drug delivery device.

We claim:

1. A device for administering an anesthetic or analgesic agent continuously to a patient's bladder, the device comprising: an elastic device body which comprises an anesthetic or analgesic agent, wherein the device body is configured to provide continuous controlled release of the anesthetic or analgesic agent over a treatment period of 24 hours or more in an amount effective to achieve a therapeutic effect which is sustained beyond the end of the treatment period.

2. The device of claim 1, wherein the anesthetic or analgesic agent comprises lidocaine.

3. The device of claim 2, which is configured to release from 15 mg to 30 mg lidocaine (FBE) per day over a first 1 to 4 days of the treatment period and from 15 mg to 3 mg lidocaine (FBE) per day over a remainder of the treatment period.

4. The device of claim 2, which is configured to release from 25 mg to 60 mg lidocaine (FBE) per day over a first 1 to 6 days of the treatment period and from 25 mg to 10 mg lidocaine (FBE) per day over a remainder of the treatment period.

5. The device of claim 2, which is configured to release a mean average amount of from about 5 mg to about 30 mg lidocaine (FBE) per day.

6. The device of claim 5, which is configured to release a cumulative amount of from about 20 mg to about 400 mg lidocaine (FBE).

7. The device of claim 2, which is configured to release the lidocaine continuously from 2 to 28 days.

8. The device of claim 7, which is configured to release a mean average amount of from about 5 mg to about 30 mg lidocaine (FBE) per day and a cumulative amount of from

about 150 mg to about 1000 mg lidocaine (FBE) over the treatment period.

9. The device of claim 7, which is configured to release a mean average amount of from about 10 mg to about 30 mg lidocaine (FBE) per day and a cumulative amount of from about 100 mg to about 600 mg lidocaine (FBE) over the treatment period.

10. The device of claim 2, which is configured to release the lidocaine continuously from 3 to 21 days.

11. The device of claim 2, which is configured to release the lidocaine continuously from 10 to 14 days.

12. The device of claim 2, which is configured to release from 20 mg to 70 mg lidocaine (FBE) per day over a first 1 to 6 days of the treatment period and from 25 mg to 10 mg lidocaine (FBE) per day over a remainder of the treatment period.

13. The device of claim 1, wherein the anesthetic or analgesic agent is in the form of a plurality of solid tablets which comprise lidocaine hydrochloride monohydrate.

14. The device of claim 13, wherein the elastic device body comprises a silicone elastomer tube and the plurality of tablets are disposed in a lumen in the silicone elastomer tube.

15. The device of claim 14, which comprises from 246 mg to 801 mg of lidocaine hydrochloride monohydrate.

16. The device of claim 15, which is configured to release the lidocaine hydrochloride monohydrate continuously from 2 to 28 days, at a mean average amount of from about 5 mg to about 30 mg lidocaine (FBE) per day over the treatment period.

17. A device or composition for administering an anesthetic or analgesic agent continuously to a patient's bladder over a treatment period of 24 hours or more in an amount effective to achieve a therapeutic effect which is sustained beyond the end of the treatment period.