Overactive bladder is a common and troublesome condition for many older people. Although the first-line treatment for the condition is with behavioral and lifestyle measures, many older people will require pharmacological therapy to successfully manage their condition. Fesoterodine, a relatively new antimuscarinic agent for the treatment of overactive bladder, has been extensively trialed in older people and is associated with a significant improvement in both disease related outcomes and in quality of life. Fesoterodine also appears to be well tolerated in this older group of patients. This review discusses the available evidence for fesoterodine in older people to date.

Keywords: cognitive function • efficacy • fesoterodine • older people • overactive bladder • tolerability • urgency urinary incontinence

Overactive bladder (OAB), the lower urinary tract symptom (LUTS) complex consisting of urinary urgency, usually accompanied by frequency and nocturia, with or without urgency urinary incontinence, in the absence of urinary tract infection or other obvious pathology is increasingly prevalent in association with increasing age [1–3]. More recent data, assessing the accrual of LUTS in a sample of females and males with time, confirm age as a major risk factor for development of the condition [4,5]. Apart from the impact on quality of life and well-being attributable to LUTS, OAB is associated with a number of health-related problems in older people. Published data show an increased risk of falls and fractures, sleep disturbance, depression, urinary tract infection, and risk of institutionalization associated with urinary incontinence [6–9]. As populations in the developed world age and as the absolute number of people with OAB in the population rises, it is likely that the demand for adequate treatment of the condition will also increase. There appears to be increased expectation of quality of life, and those in their seventh decade of life also appear to be more demanding of healthcare services [10]. Similarly, the financial pressures faced by many economies will require older people to remain in work longer, reinforcing the requirement to stay active and keep conditions such as OAB under control.

OAB management

OAB management consists of lifestyle (fluid management, weight maintenance and physical exercise) and conservative (bladder training, urgency suppression and pelvic floor muscle therapy) techniques [11]. If these methods of management are unsuccessful or unsuitable then pharmacological therapy is the next logical step in treatment, although there are limited data about the superior effects of combining these approaches to management [12]. Until very recently, available drug therapy for urgency incontinence consisted of antimuscarinic compounds, aimed at suppressing the storage symptoms associated with the condition. The
Pathophysiology of OAB is not completely understood, but it is likely that antimuscarinic drugs act by inhibiting the $M_3$, subtype of muscarinic receptors in the urinary bladder, perhaps leading to a decrease in spontaneous detrusor contractions and an alteration of sensory function in the storage phase of micturition [13].

$M_3$ receptors are found in many other tissues: the smooth muscle of the bowel, salivary glands, the ciliary muscle of the eye and in the brain, which means that the use of antimuscarinic agents can give rise to anticholinergic-type adverse events, such as dry mouth, constipation and blurred vision [14]. These adverse effects are usually mild to moderate in severity and data suggest that these are generally tolerated by older patients if they are obtaining effective relief of symptoms. There is accumulating evidence suggesting that, perhaps because of the increased severity of urinary incontinence in older people [15], or because of the limited success with behavioral or lifestyle measures in older people, they are more likely to request drug therapy to control their OAB symptoms if the drug therapy is withdrawn [16]. Older people are also more likely to need higher doses of drug to achieve most benefit, particularly in the >75 years old category [17,18].

Given that the limited available human data appear to show that muscarinic receptor expression appears to decline in association with increasing age [19], this suggests that the increased doses required may not be related to the effect at the level of the bladder, as less antimuscarinic agent, rather than more, should be required to achieve complete blockade. This is consistent with changes observed in older versus younger male rats, where detrusor contraction in response to carbachol is reduced [20].

A wide range of drugs of varying vintage are available, all of which have evidence of efficacy and variable data concerning their tolerability [21]. Data on the efficacy of this group of drugs in older people come from either preplanned studies in community dwelling older adults [22–24,101], from a few studies of nursing home residents [25,26] or from post hoc pooled analyses of data from older people included in studies of all adults [27,18,27–29]. There are some deficiencies in these data. The majority concern community dwelling fit older people who may not be representative of frail or vulnerable older people and there is limited reporting of the effect of comorbid conditions or coexisting medication. Certainly there is a perception that some side effects of these medications, particularly those concerning the CNS, are poorly reported, most likely because they are not proactively sought [30]. Both tolterodine, fesoterodine and its metabolite, 5-hydroxymethyl tolterodine (5-HMT), have a high level of brain anticholinergic activity in vitro and are therefore theoretically likely to be associated with central anticholinergic side effects [31]. However, in vivo, the level of the drug in the brain is modulated both by blood–brain barrier penetration, dependent upon the size, lipophilicity and charge of the molecule, and also the rate of active efflux from the CNS by protein-mediated transporter systems, for which fesoterodine is a substrate [32]. Owing to elderly specific concerns, and given the increasing need for effective and safe treatment of the condition, the newer antimuscarinic drug, fesoterodine, has been the subject of extensive investigation in older people. This review discusses the available data on its use.

Who are the elderly?

Much of the world’s population is experiencing profound demographic change. Developed countries are undergoing a graying of their population such that forecasts suggest that for many, the number of people over the age of 65 will shortly outnumber those under the age of 20. The greatest expansion in the number of older people will be in the proportion of those in their ninth decade of life [33]. Whereas aging for many is characterized as “a progressive, generalized impairment of function resulting in a loss of adaptive response to stress (loss of biological reserve) and in a growing risk of age-associated disease” [34], we are witnessing a change in the physical wellness of older people in the ‘baby boomer’ generation which has led to reductions in late life disability [35]. This means that now, more than ever before, older people constitute a heterogeneous population. Chronological age is simply too unsophisticated a marker with which to label this group. A simple distinction might be drawn between the robust and frail elderly. Frailty as a geriatric concept has a number of definitions which centre on the concept of biological reserve. The frailty phenotype combines impaired physical activity, mobility, balance, muscle strength, motor processing, cognition, nutrition and endurance [36–38]. It is not identical to disability and comorbidity. Among a study of people meeting strict ‘phenotypic’ criteria for frailty, only 22% also had both comorbidity and disability; 46% had comorbidity without disability; 6% disability without comorbidity and 27% had neither [37]. However, frail people do tend to have a high risk of intercurrent disease, increased disability, hospitalization and death. One may then consider older people in two simplified categories, a largely fitter, community dwelling group and the frail elderly. This review will discuss drug treatment with reference to both groups.
Fesoterodine

Fesoterodine is an orally administered prodrug which is rapidly converted into its active metabolite, 5-HMT, by ubiquitous esterases, largely in the gut, bypassing the hepatic cytochrome pathway. Tolterodine is also converted into this compound, but by routes requiring metabolism by the CYP2D6 enzyme. The advantage gained by use of fesoterodine is that the conversion to 5-HMT is such that the levels of the active metabolite are reasonably predictable and are not dependent upon CYP2D6 metaboliser status. Metabolism is rapid and virtually complete such that fesoterodine is undetectable in the bloodstream after oral dosing. Fesoterodine binds onto muscarinic receptors on both the detrusor and bladder mucosa. 5-HMT has more than ten-times the affinity for muscarinic receptors than its parent compound [39,40]. 5-HMT requires hepatic metabolism via the CYP3A4 and CYP2D6 enzymes for its elimination. In patients with moderate hepatic impairment, 5-HMT peak and total exposure are increased approximately 1.4- and 2.1-fold, respectively, and no dose adjustment is recommended. Fesoterodine has not been studied in people with severe hepatic impairment and is not recommended for use in these patients [41]. When fesoterodine 8 mg was given concomitantly with potent CYP3A4 inhibitors such as ketoconazole, 5-HMT exposures increased approximately 2.0–2.5 [41]. Thus, similar restrictions noted for other antimuscarinic agents regarding concomitant treatment with potent inhibitors of CYP3A4 such as ketoconazole exist [42]. However, concomitant administration of moderate CYP3A4 inhibitors, such as fluconazole, does not appear to lead to accumulation of the drug even at the higher, 8-mg dose, although the maximum age of the healthy volunteers in this study, as in all of the pharmacokinetic studies, was 55 years and no data exists in older people [42]. The influence of renal impairment on the pharmacokinetics of fesoterodine has been studied in 16 subjects. The concentration of 5-HMT increases by a factor of 1.4, 1.5 and 2.0 in subjects with mild, moderate, and severe renal impairment, respectively. In this study there was a clear correlation between the renal clearance of 5-HMT and creatinine clearance. The terminal half-life (6–7 h) of 5-HMT was unaffected by renal impairment and the unbound fraction of 5-HMT in plasma was similar across all groups [43]. The pharmacokinetics of single dosing of fesoterodine in people >65 years old, albeit not in those >75 years old has been studied [44]. In this study there was no clinically significant effects of age, race or sex on fesoterodine pharmacokinetics. Additionally, there are data on the effect of warfarin administration in combination with fesoterodine, included here as warfarin is frequently prescribed in older people. In this study, the pharmacokinetics and pharmacodynamics of warfarin 25 mg in healthy adults up to the age of 41 years was unaffected by coadministration of 8-mg fesoterodine [45].

Efficacy of fesoterodine in older people

The efficacy of fesoterodine for the treatment of OAB has been extensively studied in the adult population. A post hoc pooled analysis of data in older adults, compiled from older participants in registration trials has been published [17]. The study used data from two randomized, double-blind, double-dummy, placebo-controlled, parallel-arm, 12-week studies, one in Europe and the other in the USA [46–47]. For the analyses, data were stratified into three categories according to subject age: <65, ≥65–<75 and ≥75 years. In both studies, the subjects were randomized to fesoterodine 8 mg, fesoterodine 4 mg, or placebo, all administered once daily. The safety analyses included all subjects in both studies who had taken >1 dose of the trial medication after randomization. Of 1681 people randomized, 620 participants were included in the efficacy analysis (<65 years, n = 1088; ≥65–<75 years, n = 366, >75 years, n = 166). Approximately 90% of the subjects were white, with females outnumbering males by more than threefold. Subject weight, height and BMI was approximately the same across age and treatment groups except that the proportion of males in the ≥65–<75- and ≥75-year age groups was greater than in the <65-year age group. Those aged ≥75 years had significantly more reported urgency urinary incontinence (UUI) episodes at baseline than the younger groups (both p < 0.0001), and those aged ≥65–<75 years reported significantly more UUI episodes than those aged <65 years (p < 0.0049). Interestingly, objective OAB symptoms only improved at 12 weeks in the group ≥75 years using the higher dose (8 mg) of fesoterodine. The data for 4 mg of fesoterodine failed to reach statistical significance for any bladder diary based variable. After 12 weeks, for those aged <65 years the improvement in UUI episodes was greater with fesoterodine 8 mg than with 4 mg. Also, improvements in micturition frequency and maximum voided volume were greater with fesoterodine 8 mg than with 4 mg among those aged ≥75 years. Compared with placebo, the treatment response rates, as determined from the ratings on the patient-completed Treatment Benefit Scale, were significantly greater at week 12 for those treated with fesoterodine 4 or 8 mg for all age groups. The improvements in the bladder diary variables and treatment response occurred as early as week 2.

The more recently reported preplanned trial, the
study of fesoterodine in the aged (SOFIA) \[101\], was a 12-week randomized, placebo-controlled trial in people with OAB of >65 and >75 years old conducted in Europe. After a 2-week run, subjects were randomized 1:1 to either placebo or fesoterodine. After 4 weeks of therapy, subjects could opt to increase their dose to 8 mg, based on being asked a standardized question about efficacy and the risk of side effects. Subjects could reduce their dose back down to 4 mg at any time during the 12 weeks of the study. Additionally, subjects were stratified 1:1 into day-time and night-time dosing and between subjects >65 and ≥75 years. Recruitment was handled such that 1/3 of randomized subjects were in the latter group. The primary outcome measure in this study was the change in the number of urinary urgency episodes, compared with placebo, between baseline and 12 weeks. Other diary end points included the change from baseline in urinary frequency, UUI episodes, severe urgency episodes, frequency of nocturnal micturition and incontinence pads used per 24 h. Diary-dry rates at 8 and 12 weeks were also calculated. Other assessments comprised the OAB Questionnaire, the Patient Perception of Bladder Condition and the Urgency Perception Scale at baseline and weeks 4, 8 and 12 \[48–50\]. The OAB Satisfaction Questionnaire and the Treatment Benefit Scale were completed at week 12 \[51,52\]. The Folstein’s Mini Mental State Examination \[53\] and the Vulnerable Elders Survey \[55\], which identifies those at risk of death in the following two years. In this 12-week, double-blinded, placebo-controlled study, there were 562 (281 per group; mean age 75 years) subjects with urgency urinary incontinence of more than twice daily. A total of 40% (562/1401) of screened subjects were retained in the study of whom 79% (446/562) completed the trial. Mean reductions in UUI episodes per 24 h at week 12 (baseline adjusted least square mean change of versus placebo -0.65 [0.21]; p < 0.0018) and 24-h micturition frequency (baseline adjusted least square mean change versus placebo -0.84 [0.23]; p < 0.0003) were significantly greater in the fesoterodine-treated group \[50\].

More recently, reported at the American Urological Association meeting of 2012, fesoterodine has been studied in older people classified as ‘vulnerable elderly’ according to the Vulnerable Elders Survey \[53\], which identifies those at risk of death in the following two years. In this 12-week, double-blinded, placebo-controlled study, there were 562 (281 per group; mean age 75 years) subjects with urgency urinary incontinence of more than twice daily. A total of 40% (562/1401) of screened subjects were retained in the study of whom 79% (446/562) completed the trial. Mean reductions in UUI episodes per 24 h at week 12 (baseline adjusted least square mean change of versus placebo -0.65 [0.21]; p < 0.0018) and 24-h micturition frequency (baseline adjusted least square mean change versus placebo -0.84 [0.23]; p < 0.0003) were significantly greater in the fesoterodine-treated group \[50\].

Safety & tolerability of fesoterodine in older people

Examining the data from the pooled analysis \[17\], the most commonly reported adverse events associated with fesoterodine treatment in all age groups were dry mouth, the prevalence of which increased in association with increasing age, and constipation; however, most cases were mild or moderate in severity. Compared with placebo in all age groups, the rate of dry mouth was greater among those receiving fesoterodine 4 mg (<65-years old: 20%; ≥65–<75-years old: 17%; ≥75-years old: 17%) or 8 mg (<65-years old: 33%; ≥65–<75-years old: 35%; ≥75-years old: 46%). Dry mouth was predominantly mild in nature for both the 4-mg (<65-years old: 85%; ≥65–<75-years old: 71%; ≥75-years old: 70%) and 8-mg (<65-years old: 61%; ≥65–<75-years old: 67%; ≥75-years old: 80%) doses. The rate of constipation was greater among those aged ≥75 years and receiving fesoterodine 4 or 8 mg (10 and 15%) and among those aged ≥65–<75 years.
receiving fesoterodine 8 mg (11%) than among the respective placebo age groups (2–3%). The incidence of urinary retention was generally low; 12 subjects, and was slightly greater among the oldest subjects receiving 8-mg fesoterodine. Only one subject, a male and was slightly greater among the oldest subjects of urinary retention was generally low; 12 subjects, respective placebo age groups (2–3%). The incidence of urinary retention was generally low; 12 subjects, respective placebo age groups (2–3%).

Discontinuations due to adverse events occurred in the <65 year group in 2% (placebo), 3% (4 mg) and 7% (8 mg); in the ≥65–<75 group in 3% (placebo), 6% (4 mg) and 8% (8 mg) and in the ≥75 year old group in 12% (placebo), 11% (4 mg) and 9% (8 mg) of cases.

Whilst this study was stratified by age, and compared the results of fesoterodine therapy to those achieved in younger adults, the study did not address adverse events which may be of interest in older people, such as cognitive impairment.

SOFIA revealed dry mouth (33.9 vs 5.3% for drug vs placebo) and constipation (8.9 vs 2.5% for drug vs placebo) to be the most frequent treatment emergent adverse effects in this older group of subjects [101]. The majority of dry mouth, (71% in both groups) was categorized as mild in nature. The rate of adverse events did not vary by day-time or night-time dosing. CNS adverse events, including reported cognitive impairment occurred relatively rarely. A total of 78 fesoterodine-treated (20%) and 52 placebo-treated subjects (13%) discontinued the study prematurely. Discontinuation rates due to adverse events were 12% for fesoterodine and 6% for placebo. Only three subjects in the fesoterodine group discontinued due to cognitive function-related adverse events. There was no change in the Mini Mental State Examination score in or between either group over the 12 weeks of the study. Six people reported urinary retention, including two males within the first 4 weeks of treatment with fesoterodine. Four subjects required catheterization resulting in discontinuation of participation.

The vulnerable elderly study found rates of discontinuation due to adverse events of 5.0% (n = 14/281) for the placebo group and 9.3% (n = 26/281) for the fesoterodine group. Serious adverse events occurred in 6/281 (2.1%) subjects receiving placebo and 8/281 (2.8%) receiving fesoterodine; none were considered treatment-related. In the active treatment group, 9/281 (3.2%) developed urinary retention, three of whom required catheterization [56].

In the pooled analysis of fesoterodine in older people [17], quality of life was measured using the King’s Health Questionnaire [57]. At the end of the 12-week study, compared with the baseline and placebo values, there was improvement with active treatment in most domains of the questionnaire. Unlike the bladder diary variables, the improvements with fesoterodine 4 mg were statistically significantly different from placebo among those aged ≥75 years. There was no statistically significant change versus placebo in either the personal relationships or general health perception domains, in common with other similar studies.

### Long-term follow-up

A post hoc analysis of data from two of the planned open-label extension studies of fesoterodine, published in 2011, which examined those remaining on fesoterodine for up to 36 months following the initial 12 week studies included some older people. The mean age of the sample ranged between 57.4 (SD: 13.0) and 61.1 (SD: 13.4) years. Over the period of the study, out of 185 males and 705 females who entered the extension study, 85 (45.9%) males and 356 (50.4%) females took medication for 24 months. No age-stratified results were reported and thus no conclusions about the longer term tolerability of this medication in older people can be drawn [58].

### Cognitive function

Given the demonstrated negative effects of oxybutynin on the cognition of older people [59] and the reported impact of drugs with anticholinergic properties on cognition [60], the effect of fesoterodine on cognitive function compared with placebo, using alprazolam as an active control was assessed in a group of 20 cognitively intact older adults with a mean age 72 years. The study found no detectable impairment of cognition in a variety of cognitive measurements, such as reaction time, visual and verbal learning, executive function and memory, associated with a single dose of either fesoterodine 4 or 8 mg when compared with placebo. Alprazolam was associated with a significant reduction in performance on each test compared with placebo [61].

### Discussion

Whereas there are data concerning the efficacy and tolerability of various antimuscarinics in older people (>65 years) from a variety of indirect sources, the efficacy and tolerability of fesoterodine has been prospectively assessed and proven in older people with OAB. Fesoterodine appears to be effective in controlling the symptoms of OAB, both in terms of urinary incontinence episodes and urinary urgency episodes.
Interestingly, the SOFIA trial reported no difference in urgency urinary incontinence episodes between fesoterodine and placebo. This may have been due to the relatively low proportion of those with urgency urinary incontinence, and the low frequency of those episodes at baseline, making a significant impact that much more difficult to achieve. Older people generally report more adverse events than younger people, and this was borne out in the pooled analysis. The number of withdrawals from treatment remained low in both studies, although higher in the older age groups in the pooled analysis, with the exception of the 8-mg dose in the oldest participants, where not only did withdrawal rate remain stable, but was in line with the withdrawal rate for those people on placebo. The number of withdrawals due to adverse events in the SOFIA trial was consistent with the pooled analysis.

An obvious strength of the SOFIA trial is that the adverse events affecting cognitive function were reported. Only one subject withdrew from the study due to cognitive impairment thought to be due to active treatment. The Mini Mental State Examination did not change from baseline in a largely unselected group of older people, this perhaps reflects the fact that the instrument may be too insensitive to pick up subtle changes in cognitive state, as observed in studies using this and similar scores examining the impact of bladder antimuscarinics in cognitively impaired older people taking cholinesterase inhibitors for dementia [62,63]. Additionally, in SOFIA, subject to restrictions on newly prescribed antimuscarinics, there was no exclusion that may have limited the total anticholinergic load upon each individual; a factor known to increase the probability of scoring poorly on the Mini Mental State Examination [64]. The available studies provide useful data on the effectiveness and safety of fesoterodine in the community-dwelling elderly and emerging information on vulnerable elderly as defined by the vulnerable elders survey. There is still a need to assess pharmacological treatment of OAB in this group, to reassure clinicians of the comparable efficacy and tolerability and to assess its cognitive safety. As yet, assessment of cognitive safety of the antimuscarinics has, for the most part, been undertaken in cognitively intact older people, and over relatively short periods of time [65]. There is a clear need to systematically examine the effect of these drugs in those who might be more cognitively at risk. Proactive seeking of side effects which may be of more concern in older people, such as delirium and falls is clearly desirable. Despite the available evidence of minimal impact of these drugs in an unselected population, there is often reluctance to prescribe these drugs to older people [66,67]. Additionally, there are no long-term data on the continued efficacy and tolerability or safety of fesoterodine specifically in older people; provision of these data would certainly help in confidently prescribing the drug to older people.

Future perspective
Antimuscarinic medications have remained the first-line pharmacological treatment of OAB since the introduction of oxybutynin over 30 years ago. Since that time there has been refinement in the tolerability and side-effect profiles of medications for OAB, but little additional efficacy over and above that reported with treatment with oxybutynin [21,68]. Whilst undoubtedly of benefit to many people, tolerability and perceived efficacy of these medications is still a problem, leading to many patients stopping their medication. OAB medications are associated with very poor persistence rates in the community, although perhaps less so in older people [69,70]. Many patients also stop their medications due to unrealistic expectations of the results of therapy, a factor which should be modifiable by the health care provider [71]. There is still much that might be done to enhance long-term adherence to these medications and additionally, the efficacy of these medications has yet to be tested in other disease areas common to the older population in which urgency urinary incontinence is writ large, such as stroke, Parkinson’s disease and recurrent falls.

Recently, a β3 receptor agonist, mirabegron, has been studied in OAB [72,73]. Theoretically, mirabegron enhances the relaxation of the detrusor whilst filling, leading to a reduction in the main symptoms of OAB. This medication is not associated with antimuscarinic side effects nor, from available data, does it seem to lead to an excess of hypertension in users versus placebo. Data on pharmacokinetics in healthy volunteers >65 years of age show no age-related effects [74]. Published data from older people included in the clinical trial program suggest equivalent efficacy to younger people in terms of reductions in frequency of micturition and incontinence episodes and the effect size appears to be comparable to that seen with the antimuscarinics [74]. Whether this drug becomes more favored in older people because of the reduction in antimuscarinic side effects associated with its use remains to be seen. Common adverse events associated with mirabegron are dose-related increases in pulse rate and urinary tract infection. There are some other drugs in this class under investigation in varying markets round the world. For the moment, though, for successful pharmacological treatment of this condition; the antimuscarinics are here to stay. For the elderly, at time of writing, there is robust
Executive summary

- Overactive bladder (OAB) is increasingly prevalent in association with increasing age.
- OAB is associated with a number of health-related problems in older people such as an increased risk of falls and fractures, sleep disturbance, depression, urinary tract infection, and risk of institutionalization associated with urinary incontinence.
- OAB management consists of lifestyle and conservative management techniques in addition to pharmacotherapy. There are limited data about the superior effects of a combination approach to management.
- It is believed that antimuscarinic drugs for OAB act by inhibiting the M3 receptors in the urinary bladder, perhaps leading to a decrease in spontaneous detrusor contractions and an alteration of sensory function in the storage phase of micturition.
- Fesoterodine is an orally administered prodrug which is rapidly converted into its active metabolite, 5-hydroxymethyl tolterodine, by ubiquitous esterases, largely in the gut, bypassing the hepatic cytochrome pathway.
- The efficacy of fesoterodine for the treatment of OAB has been studied in a post hoc pooled analysis of data in older adults and from preplanned European and American studies of the elderly.
- Fesoterodine is effective in improving the majority of bladder diary-related OAB variables versus placebo and effective in improving subjective patient reported outcome measures and quality of life measures in older people.
- There is no detectable impairment of cognition in a variety of cognitive measurements, such as reaction time, visual and verbal learning, executive function and memory, associated with a single dose of either fesoterodine 4 or 8 mg when compared with placebo in cognitively intact older people.
- In clinical trials, cognition-related treatment adverse events are few. The most frequently reported adverse events are dry mouth and constipation.
- Fesoterodine appears to be an effective option for the treatment of OAB in the elderly.

Conclusion

Antimuscarinic therapy is likely to remain first-line pharmacological therapy for OAB. There is an increased need to show efficacy and safety of these drugs in older people. The condition affects more of them and is, perhaps, more severe in older people. There are increasing numbers of older people in the populations of the developed world and expectations of healthy aging are changing. Fesoterodine shows evidence of efficacy in the community-dwelling elderly and has data in ‘older’ old people, albeit not in those who might be described as frail. Fesoterodine also appears to be tolerable in this age group and treatment with fesoterodine does not lead to an excess of adverse events related to cognitive dysfunction in a largely unselected group of older adults.

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