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## A simple, rapid and efficient method for isolating detrusor for the culture of bladder smooth muscle cells

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**Purpose:** To establish a simple and rapid method to remove serosa and mucosa from detrusor for the culture of bladder smooth muscle cells (SMCs).

**Methods:** Fourteen New Zealand rabbits were randomly allocated to two groups. In the first group, pure bladder detrusor was directly obtained from bladder wall using novel method characterized by sub-serous injection of normal saline. In the second group, full thickness bladder wall sample was cut down and then, mucosa and serosa were trimmed off detrusor ex vivo. Twelve detrusor samples from two groups were manually minced and enzymatically digested, respectively, to form dissociated cells whose livability was detected by trypan blue exclusion. Proliferative ability of primary culture cells was detected by CCK-8 kit and purity of second-passage SMCs was detected by flow cytometric analyses. Another two detrusor samples from two groups were used for histological examination.

**Results:** Sub-serous injection of normal saline combined with blunt dissection can remove mucosa and serosa from detrusor layer easily and quickly. Statistical analysis revealed the first group possessed higher cell livability, shorter primary culture cell doubling time and higher purity of SMCs than the second group ( $P < 0.05$ ). Histological examination confirmed no serosa and mucosa existed on the surface of detrusor obtained by novel method, while serosa or mucosa residual can be found on the surface of detrusor obtained by traditional method.

**Conclusion:** Pure detrusor can be acquired from bladder wall conveniently using novel method. This novel method brought about significantly higher purity and cell livability as compared to traditional method.

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## The association between glomerular filtration rate and stroke in hypertensive patients in rural areas of China

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**Objectives:** The present study is to explore the association between estimated glomerular filtration rate (eGFR) and stroke in hypertensive patients in rural areas of China.

**Methods:** The prospective study was based on 3,711 hypertensive patients who were aged  $\geq 35$  years, free from cardiovascular diseases and had serum creatinine at baseline. eGFR was estimated using the chronic kidney disease epidemiology collaboration equation.

**Results:** During a median follow-up of 4.9 years, 176 first ever strokes (98 ischemic, 75 hemorrhagic and 3 were unspecified strokes) occurred. We found no independent association between eGFR and risk of hemorrhagic stroke. In contrast, with decreasing eGFR, the risk of total and ischemic stroke strongly increased; the sex and age adjusted hazard ratios for overall and ischemic stroke were 3.34 (95% CI, 1.61 to 6.93) and 3.79 (95% CI, 1.33 to 10.81) for patients with  $eGFR < 60$  versus  $eGFR \geq 90$  ml/min/1.73 m<sup>2</sup>, respectively. In addition, patients with an eGFR of 60 to 90 relative to  $eGFR \geq 90$  ml/min/1.73 m<sup>2</sup> had hazard ratios of 2.31 (95% CI, 1.53 to 3.51) and 3.24 (95% CI, 1.76 to 6.00) for overall and ischemic stroke after adjustment for sex and age, respectively. Adjustment for other cardiovascular factors only slightly attenuated the associations.

**Conclusions:** The patients with decreased eGFR, also included those with eGFR range between 60 and 90 ml/min/1.73 m<sup>2</sup>, had an independently increased risk of overall and ischemic stroke in hypertensive patients in rural areas of China.

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