Lifestyle factors and the risk of kidney and bladder cancer in the Japanese population: A mini-review

Masakazu Washio1*, Mitsuru Mori2 and Akiko Tamakoshi3

1Department of Community Health and Clinical Epidemiology, St. Mary's College, Japan
2Department of Public Health, Sapporo Medical University School of Medicine, Japan
3Department of Public Health, Hokkaido University Graduate School of Medicine, Japan

Abstract

The incidences of kidney cancer and bladder cancer are lower in Asian countries than in Western countries. However, the incidences and mortality rates of kidney cancer and bladder cancer have been increasing in Japan. In this paper, we would like to introduce findings from epidemiological studies about tobacco smoking, drinking alcohol and physical activity on the risk of kidney and bladder cancers in the Japanese population. Tobacco smoking is a risk factor both for kidney cancer and bladder cancer in the Japanese population. On the other hand, physical activity is suggested to reduce the risk of kidney cancer in the Japanese population. Regarding alcohol consumption, one study showed an increased risk of bladder cancer, while other studies showed no association between alcohol consumption and the risk of bladder cancer in the Japanese population. Further studies are needed to find an answer.

Introduction

The urinary system consists of the kidneys, ureters and bladder. In adults, renal cell carcinoma, which represents 80 to 90% of kidney cancer, arises from cells from the proximal convoluted renal tubules [1]. On the other hand, renal pelvic cancer, which represents the rest of the kidney cancer, arises from mucosa of the upper urinary tract [1] while bladder cancer arises from mucosa of the lower urinary tract [2]. Both upper urinary tract cancer and bladder cancer are urothelial cancer.

The incidences of kidney cancer [1,3] and bladder cancer [2,3] are lower in Asian countries than in Western countries. However, the incidences and mortality rates of kidney cancer and bladder cancer have been increasing in Japan. The crude and age-adjusted incidences of kidney cancer increased from 1.7/100,000 and 1.6/100,000 in 1975 to 17.9/100,000 and 7.1/100,000 in 2012 [4] while the crude and age-adjusted incidences of bladder cancer increased from 3.3/100,000 and 3.0/100,000 in 1975 to 16.1/100,000 and 4.9/100,000 in 2012 [4]. These findings suggest that lifestyle factors may play an important role in the development of these two cancers.

On the other hand, the crude and age-adjusted mortality of kidney cancer increased from 0.5/100,000 and 0.5/100,000 in 1958 to 7.3/100,000 and 1.9/100,000 in 2015 [5]. In contrast, age adjusted mortality of bladder cancer increased from 1.0/100,000 in 1958 to 1.6/100,000 in 1974 but decreased to 1.4/100,000 in 2015 although the crude mortality of bladder cancer increased from 1.0/100,000 in 1958 to 6.5/100,000 in 2015 [5].

Westernization of the life-style habits (e.g., westernization of eating habits, the spread of privately-owned cars and household electric appliances as well as agricultural mechanization) may increase the risk of kidney cancer and bladder cancer in Japan. Another plausible explanation is that the incidences and mortality rates of these two cancers increased because the proportion of the elderly has been increasing in Japan. The proportion of elderly (i.e., 65 years or older) increased from 10.5% in 1985 to 26.7% in 2015 [6].

Smoking is a major risk factor for human cancer [3,7] and alcohol consumption has been suggested to increase the risk of human cancer as well [3,7]. However, it is controversial whether alcohol consumption influences the risk of kidney cancer and bladder cancer although smoking is an established risk factor for kidney cancer [1,3,7] and bladder cancer in western countries [2,3,7].

In this paper, we would like to introduce findings from epidemiological studies about life-style factors (e.g., tobacco smoking, alcohol drinking, physical activity) on the risk of kidney or bladder cancer in the Japanese population.

Tobacco

Cigarette smoking is associated with an increased risk of malignancies of both organs in direct contact with smoke such as the esophagus and lung, and organs not in direct contact with smoke, such as the bladder, urinary tract and kidney [8].

Kidney cancer

In western countries, McLaughlin et al. [9] reported that compared with nonsmokers, current smokers showed an increased risk of renal cell cancer (HR=1.47, 95%CI=1.20-1.80) and the risk of renal cell cancer (vs. nonsmoker) increased with the number of cigarettes per day (1-9 vs. 0: HR=1.31, 95%CI=0.93-1.83; 10-20 vs. 0: HR=1.37, 95%CI=1.07-1.74).

Correspondence to: Dr. Masakazu Washio, Department of Community Health and Clinical Epidemiology, St. Mary's College, 422 Tsubuku-hon-machi, Kurume City, Fukuoka, 830-8558, Japan, E-mail: washio@st-mary.ac.jp

key words: kidney cancer, bladder cancer, tobacco, alcohol, risk factor

Received: March 20, 2017; Accepted: April 21, 2017; Published: April 24, 2017
However, in Japan, Mikami [11] failed to demonstrate that smoking is a risk factor of kidney cancer in his case-control study, which may be partly explained by the fact that, in Japan, most men were smokers while most women were non-smokers in those days (between 1975 and 1995: smoking rate: between 58.8% and 76.2% for men, between 13.7% and 15.2% for women) [12]. Another explanation may be some biases in his hospital-based case-control study because patients hospitalized with other diseases at the same hospitals may not have the same exposure distribution (i.e., smoking status) as the general population [13]. In addition, Washio et al [14] reported that current smoking showed no meaningful association with the development of renal cell cancer (ever smokers vs. never smokers: RR=1.38, 95%CI=1.27-1.50). Thus, cigarette smoking is an established risk factor for kidney cancer kidney cancer [1,3,7,9,10].

| Site of cancer | Factor     | Association | Study design      | Reference |
|---------------|------------|-------------|-------------------|-----------|
| Kidney        | Tobacco    | No association | Case control study | [11]      |
|               |            | No association | Cohort study      | [14]      |
|               |            | Positive     | Cohort study      | [15]      |
|               |            | Positive     | Cross sectional study | [17]    |
|               |            | Positive     | Cohort study      | [22]      |
| Upper urinary | Tobacco    | Positive     | Case control study | [24]      |
| Bladder       | Tobacco    | Positive     | Meta-analysis     | [20]      |
|               |            | Positive     | Cohort study      | [23]      |
|               |            | Positive     | Case control study | [24]      |
| Kidney        | Physical activity | Positive | Cohort study      | [36]      |
| Kidney        | Alcohol    | No association | Case control study | [11]      |
| Bladder       | Alcohol    | No association | Case control study | [24]      |
|               |            | No association | Case control study | [21]      |
|               |            | No association | Cohort study      | [22]      |
| Kidney        | Physical activity | No association | Case control study | [30]      |
| Kidney        | Physical activity | Inverse | Cohort study      | [15]      |

95%CI=1.08-1.73; 21-39 vs. 0: HR=1.60, 95%CI=1.23-2.09; 40 or more vs. 0: HR=2.06, 95%CI=1.28-3.33, p for trend=0.001. Hunt et al. [10] estimated an overall combined risk of development of renal cell cancer (ever smokers vs. never smokers: RR=1.38, 95%CI=1.27-1.50). Thus, cigarette smoking is an established risk factor for kidney cancer kidney cancer [1,3,7,9,10].

Alcohol

Although drinking alcohol has been demonstrated to increase the risk of several sites of cancers (e.g., oral cavity, pharynx, larynx, esophagus, colorectum, liver, breast), ethanol has been suggested to play no role in the development of kidney and bladder cancer [25,26].

Kidney cancer

In western countries, alcohol consumption has been suggested to reduce the risk of kidney cancer in some studies [27-29]. Karami et al. [29] demonstrated that increasing alcohol consumption reduced the risk of renal cell cancer in the US population even after adjusting for smoking and other risk factors (9.75 grams/day or more vs. non-drinkers: HR=0.67, 95%CI=0.50-0.89, p trend=0.002). In their cohort study, 408 renal cell cancer cases were identified among 107,998 men and women during the 1,236, 486.5 person-years follow-ups.

However, Japanese epidemiologists failed to show any meaningful association between alcohol consumption and the risk of kidney cancer in the Japanese population [11,15]. These findings may be partly explained by the following way. Japanese often smoke when they drink alcohol beverages. In these studies [11,15], however, smoking was not controlled when evaluating the risk of kidney cancer. Mikami [11] did not adjust smoking because smoking showed no meaningful association with the risk of kidney cancer while Washio et al. [15] could not do so because of small number of kidney cancer death in spite of a large scale of cohort study (i.e., 88 kidney cancer death among 110,585 participants with 1,025,703 person-year follow-ups).

Bladder cancer

It has not been suggested that alcohol consumption may play some role on the development of bladder cancer in western countries [2,3,7].

Table 1. Life style factors and the risk of Kidney cancer and bladder cancer in a Japanese population

| Site of cancer | Factor     | Association | Study design | Reference |
|---------------|------------|-------------|--------------|-----------|
| Kidney        | Tobacco    | No association | Case control study | [11]      |
|               |            | No association | Cohort study      | [14]      |
|               |            | Positive     | Cohort study      | [15]      |
| Bladder       | Tobacco    | Positive     | Cohort study      | [22]      |
|               |            | Positive     | Case control study | [24]      |
| Kidney        | Physical activity | No association | Case control study | [30]      |
| Kidney        | Physical activity | Inverse | Cohort study      | [15]      |
| Kidney        | Alcohol    | No association | Case control study | [11]      |
| Bladder       | Alcohol    | No association | Case control study | [24]      |
|               |            | No association | Case control study | [21]      |
|               |            | No association | Cohort study      | [22]      |
| Kidney        | Physical activity | No association | Case control study | [30]      |
| Kidney        | Physical activity | Inverse | Cohort study      | [15]      |

95%CI=1.08-1.73; 21-39 vs. 0: HR=1.60, 95%CI=1.23-2.09; 40 or more vs. 0: HR=2.06, 95%CI=1.28-3.33, p for trend=0.001. Hunt et al. [10] estimated an overall combined risk of development of renal cell cancer (ever smokers vs. never smokers: RR=1.38, 95%CI=1.27-1.50). Thus, cigarette smoking is an established risk factor for kidney cancer kidney cancer [1,3,7,9,10].

Bladder cancer

In western countries, Baris et al. [18] demonstrated that both current and former smoking showed an increased risk of bladder cancer in their population-based case-control study with 1170 urothelial carcinoma patients and 1413 control subjects (current smokers vs. never-smokers: OR=5.2, 95%CI: 4.0-6.6, former smokers vs. never-smokers: OR=2.3, 95%CI=1.9-2.8). Al-Zalabani et al. [19] reported that current cigarette smoking, former cigarette smoking, pipe smoking, and cigar smoking were found to increase the risk of bladder cancer in their systemic review of meta-analyses.

Smoking is a risk factor for bladder cancer in the Japanese population as well (ever smokers vs. never smokers: RR=2.14, 95%CI: 1.87-2.44) [20], (ever smokers vs. never smokers: OR=2.40, 95%CI=1.42-4.04) [21], (current smokers vs. non-smokers: RR=1.98, 95%CI: 1.37-2.84) [22]. Kurahashi et al. [23] reported that both current and former smoking showed an increased risk of bladder cancer in both men and women (current smokers vs. never-smokers: RR=1.69, 95%CI: 1.09-2.63 for men, HR=5.45, 95%CI=2.56-11.61 for women) while Wakai et al. [24] demonstrated that cumulative consumption of cigarettes(pack-years) was positively associated with the risk of bladder cancer in their case control study with 124 cancer patients and 620 hospital controls(1-19 vs. 0: OR=1.30, 95%CI=0.65-2.59, 20-39 vs. 0: OR=1.58, 95%CI=0.82-3.05, 40-49 vs. 0: OR=2.90, 95%CI=1.55-5.42, 60+ vs. 0: OR=2.42, 95%CI=1.21-4.78, p for trend=0.0009).

Alcohol

Although drinking alcohol has been demonstrated to increase the risk of several sites of cancers (e.g., oral cavity, pharynx, larynx, esophagus, colorectum, liver, breast), ethanol has been suggested to play no role in the development of kidney and bladder cancer [25,26].

Kidney cancer

In western countries, alcohol consumption has been suggested to reduce the risk of kidney cancer in some studies [27-29]. Karami et al. [29] demonstrated that increasing alcohol consumption reduced the risk of renal cell cancer in the US population even after adjusting for smoking and other risk factors (9.75 grams/day or more vs. non-drinkers: HR=0.67, 95%CI=0.50-0.89, p trend=0.002). In their cohort study, 408 renal cell cancer cases were identified among 107,998 men and women during the 1,236, 486.5 person-years follow-ups.

However, Japanese epidemiologists failed to show any meaningful association between alcohol consumption and the risk of kidney cancer in the Japanese population [11,15]. These findings may be partly explained by the following way. Japanese often smoke when they drink alcohol beverages. In these studies [11,15], however, smoking was not controlled when evaluating the risk of kidney cancer. Mikami [11] did not adjust smoking because smoking showed no meaningful association with the risk of kidney cancer while Washio et al. [15] could not do so because of small number of kidney cancer death in spite of a large scale of cohort study (i.e., 88 kidney cancer death among 110,585 participants with 1,025,703 person-year follow-ups).

Bladder cancer

It has not been suggested that alcohol consumption may play some role on the development of bladder cancer in western countries [2,3,7].
In Japan, either Nakata et al. [21] or Wakai et al. [24] reported no meaningful association between alcohol drinking and the risk of bladder cancer in their case control studies after adjusting for smoking status and other factors. In addition, Washio et al. [22] found no association between drinking alcohol and the risk of bladder cancer death after controlling for age, sex, and smoking status in a large scale cohort study, either. In contrast, Zaitsu et al. [30] reported that current and former alcohol drinkers increased the risk of bladder cancer (ever vs. never: OR=1.33, 95%CI: 1.06-1.66) in their case control study. Japanese adolescents start smoking tobacco after drinking alcohol [31,32], and more than half of them smoke with friends at tea rooms, public houses(saloon), or in friends rooms [31]. In addition, parental smoking is positively associated with adolescents’ smoking [32]. Furthermore, Japanese men often smoke at pubs, bars or public houses (saloon) when they drink alcohol beverages. Therefore, Japanese drinkers are often exposed to environmental tobacco smoke regardless of their smoking status. Since the environmental tobacco smoke increases the risk of bladder cancer [33], we cannot deny the possibility that Zaitsu et al. [30] could not adjust the effect of environmental tobacco smoke on the risk of bladder cancer although they controlled the effect of active smoking to evaluate the association between alcohol drinking and the risk of bladder cancer. Another possibility is that alcohol consumption enhanced the risk of cancer caused by tobacco smoke because ethanol facilitates uptake of carcinogen from tobacco smoke [26]. Inoue et al. [34] reported that the positive association between alcohol consumption and cancer risk was more striking among current smokers in their large scale population-based cohort study in Japan. Last explanation may be some biases in his hospital-based case-control study because patients hospitalized with other diseases at the same hospitals may not have the same exposure distribution (i.e., smoking status) as the general population [13]. Furthermore, they compared never drinkers with ever drinkers. A part of former drinkers may have quitted alcohol because of their diseases (e.g. diabetes mellitus, liver diseases).

Since Al-Zalbani et al. [19] reported no statistically significant association between alcohol consumption and the risk of bladder cancer in their systemic review of meta-analyses and hospital controls may not have the same exposure distribution (i.e., alcohol consumption) as the general population [13], further studies are needed to confirm the association between alcohol consumption and the risk of bladder cancer in the Japanese population.

**Physical activity**

Obesity is a convincing/probable risk factor for various cancers (i.e., esophagus, colon and rectum, pancreas, liver, gall bladder, kidney, breast, endometrium, ovary, prostate, Hodgkin and non-Hodgkin lymphoma, leukemia, multiple myeloma) [25] while physical activity is a convincing/probable preventive factors for several cancers (i.e., colon and rectum, breast, endometrium, lung) [25].

**Kidney cancer**

Physical activity may prevent kidney cancer by improving obesity, insulin resistance and hypertension [35]. Behrens et al. [35] reported an inverse relationship between physical activity and the risk of kidney cancer in their systemic review and meta-analysis. In addition, Williams [36] found that the risk of kidney cancer reduced by running or walking even after adjusting for body mass index(BMI), hypertension, diabetes mellitus, and smoking(i.e., pack-years of cigarette use).

Washio et al. [15] found a positive association between BMI and the risk of kidney cancer (20.0-23.9 vs. 19.9 or less : HR=1.25, 95%CI=0.62-2.53; 24.0 or more vs. 19.9 or less: HR=1.94, 95%CI=0.95-3.99, p for trend=0.027) in a large scale cohort study, and reported that walking reduced the risk of kidney cancer (60min/day or more vs. 30min/day or less: HR=0.57 95%CI: 0.32-1.00) in the Japanese population.

**Bladder cancer**

Physical activity showed a small preventive effect against bladder cancer in a systemic review of meta-analyses by Al-Zalbani et al. [19]. On the other hand, Latino-Martel et al. [24] reported that either obesity or physical activity showed no meaningful association with the risk of bladder cancer in their review.

Since there is no meaningful association between obesity and the risk of bladder cancer in either a cohort study in a Japanese population (vs. normal: HR=0.92, 95%CI: 0.59-1.44) [21] or a hospital based-case-control study in Japan (OR=1.00, 95%CI: 0.83-1.22) [30], low physical activity seems to play little role in the development of bladder cancer in the Japanese population.

**Discussion**

Since both renal pelvic cancer and bladder cancer are urothelial cancer and incidence of renal pelvic cancer is very low, Sakauchi et al. [37] investigated the risk factors for the development of urothelial cancer in a large scale cohort study (i.e., the JACC study). In this study [37], the risk of urothelial cancer incidence increased according to the cumulative consumption of cigarettes (p for trend=0.002). Compared with never smokers, those with 799 cigarette-year or less showed 2 times increased risk (HR=2.16, 95%CI=1.21-3.86) and those with 800 cigarette-year or more showed 3 times increased risk (HR=2.75, 95%CI=1.49-5.08). As primary localization, 12 renal pelvic cancer cases, 7 ureter cancer cases and 104 bladder cancer cases were detected among 64,539 participants in this study [37]. Although Washio et al. [22] investigated risk factors for upper and lower urinary tract cancer using the data-set of the JACC study, the end point was death cases because cancer registries were available only a part of participants. In this study [22], 61 participants died from upper urinary tract cancer while 166 participants died from bladder cancer among 110585 participants. Current smokers showed an increased risk of upper urinary tract cancer death (vs. nonsmokers: HR=2.32, 95%CI=1.22-4.40), which is consistent with findings in the case control study in the United States [38].

On the other hand, current drinkers showed a non-significantly increased risk (vs. nondrinkers: HR=1.86, 95%CI=0.95-3.71). Even after controlling for age, sex and smoking status, current drinkers showed an HR greater than the unity (HR=1.64, 95%CI=0.82-3.28), which may be consistent with the result of the case control study of bladder cancer by Zaitsu et al. [30]. On the other hand, there was no association between obesity and the risk of upper urinary tract cancer death. In Japan, not a small number of case control studies of bladder cancer are case control studies of urothelial cancer [20].

**Conclusion**

Tobacco smoking is a risk factor both for kidney cancer and bladder cancer in the Japanese population. On the other hand, physical activity is suggested to reduce the risk of kidney cancer in the Japanese population. Regarding alcohol consumption, one study showed an increased risk of bladder cancer while other studies showed no association between alcohol consumption and the risk of bladder cancer in the Japanese population. Further studies are needed to find an answer.
References

1. Cho E, Lindblad P, Adami HO (2008) Kidney cancer. In: Adami HO, Hunter D, Trichopoulou D (eds). Textbook of Cancer Epidemiology. (2nd ed). Oxford University Press, New York: 597-616.

2. Kogevinas M, Garcia-Closas M, Trichopoulou D (2008) Urinary bladder cancer. In: Adami HO, Hunter D, Trichopoulou D (eds) Textbook of Cancer Epidemiology, (2nd ed). Oxford University Press, New York: 573-596.

3. WHO (2003) World Cancer Report. In: Stewart BW, Kleihues P (eds). International Agency for Research on Cancer Press, Lyon.

4. Hori M, Matsuda T, Shibata A, Katanoda K, Sobue T, et al (2015) Cancer incidence and incidence rates in Japan in 2009: a study of 32 population-based cancer registries for the Monitoring of Cancer Incidence in Japan (MCIJ) project. Jpn J Clin Oncol 45: 884-891. [Crossref]

5. Japanese Ministry of Health, Labour and Welfare (2016) Cancer mortality (1958-2015). In: Vital Statistics Japan. [http://ganjoho.jp/reg_stat/statistics/stat/annual.html]. Accessed 21 Feb, 2017.

6. Statistics Bureau, Japanese Ministry of Internal Affairs and Communications (2016) Statistical Handbook of Japan 2016. [http://www.stat.go.jp/english/data/handbook/c0117.htm]. Accessed 9 March, 2017.

7. Boiffetta P, La Vecchia C (2009) Occupational exposures. In: Detels R, Beaglehole R, Lansang MA, Gullford M,(eds). Oxford Textbook of Public Health. 5th ed. Oxford University Press, New York: 997-1020.

8. Gajalakshmi CK, Jha P, Ranson K, Nguyen S (2000) Global patterns of smoking and smoking-attributable mortality. In: Jha P, Chaloupka F (eds). Tobacco control in developing countries, Oxford University Press, New York: 11-39.

9. McLaughlin JK, Hrubec Z, Heineman EF, Blot WJ, Fraumeni JF Jr (1990) Renal cancer and cigarette smoking in a 26-year follow-up of U.S. veterans. Public Health Rep 105: 535-537. [Crossref]

10. Hunt JD, van der Hel OL, McMillan GP, Boffetta P, Brennan P (2005) Renal cell carcinoma in relation to cigarette smoking: meta-analysis of 24 studies. Int J Cancer 114: 101-108. [Crossref]

11. Mikami K (1997) Risk factors for renal cell carcinoma: a case-control study. J Kyoto Pref Univ Med 106: 1273-1283.

12. Health and Welfare Statistics Association (2005) Trend of National Health 2005. Health and Welfare Statistics Association: Tokyo.

13. Rothman KJ (2002) Types of epidemiologic study. In: Epidemiology, an introduction. Oxford University Press, New York: 57-93.

14. Washio M, Mori M, Sakauchi F, Watanabe Y, Ozasa K, et al. (2015) Cancer incidence and incidence rates in Japan in 2009: a study of 32 population-based cancer registries for the Monitoring of Cancer Incidence in Japan (MCIJ) project. Jpn J Clin Oncol 45: 884-891. [Crossref]

15. Washio M, Mori M, Mikami K, Miki T, Watanabe Y, et al. (2013) Cigarette Smoking and other risk factors for the development of kidney cancer (renal cell carcinoma) in a Japanese population: findings from the JACC study. Int J Med 15: 343-347. [Crossref]

16. Washio M, Mori M, Mikami K, Miki T, Watanabe Y, et al. (2013) Cigarette Smoking and other risk factors for Kidney Cancer Death in a Japanese Population: Japan Collaborative Cohort Study for Evaluation of Cancer Risk (JACC study). Asian Pac J Cancer Prev 14: 6523-6528. [Crossref]

17. Health and Welfare Statistics Association (2012) Trend of National Health 2012/2013. Health and Welfare Statistics Association: Tokyo.

18. Nobata S, Kiuchi S, Watanabe M, Usuda T, Mori A, et al. (2013) Association between urological cancers and cigarette smoking among those who received a health check. Nippon Jinshihouyokoshikkan yobougaku Kenkyushikaishi 21: 73-75.

19. Barsi D, Karagas MR, Verrill C, Johnson A, Andrew AS, et al. (2009) A case-control study of smoking and bladder cancer risk: emergent patterns over time. J Natl Cancer Inst 101: 1553-1561. [Crossref]

20. Al-Zalabani AH, Stewart FK, Wesselinus A, Schols AM, Zeegers MP (2016) Modifiable risk factors for the prevention of bladder cancer: a systematic review of meta-analyses. Eur J Epidemiol 31: 811-851. [Crossref]

21. Masaoka H, Matsu K, Ito H, Wakai K, Nagata C, et al (2016) Cigarette smoking and bladder cancer risk: an evaluation based on a systematic review of epidemiologic evidence in the Japanese population. Jpn J Clin Oncol 46: 273-283. [Crossref]

22. Washio M, Mori M, Mikami K, Miki T, Watanabe Y, et al. (2016) Risk Factors for Upper and Lower Urinary Tract Cancer Death in a Japanese Population: Findings from the Japan Collaborative Cohort Study for Evaluation of Cancer Risk (JACC Study). Asian Pac J Cancer Prev 17: 3545-3549. [Crossref]

23. Kurahashi N, Inoue M, Iwaisaki M, Sasazuki S, Tsugane S, et al. (2009) Coffee, green tea, and caffeine consumption and subsequent risk of bladder cancer in relation to smoking status: a prospective study in Japan. Cancer Sci 100: 294-291. [Crossref]

24. Wakai K, Hinoise K, Takezaki T, Hamajima N, Ogura Y, et al. (2004) Foods and beverages in relation to urothelial cancer: case-control study in Japan. Int J Urol 11: 11-19. [Crossref]

25. Latino-Martel P, Cottet V, Druenese-Pecollo N, Pierre FH, Touillaud M, et al. (2016) Alcoholic beverages, obesity, physical activity and other nutritional factors, and cancer Risk: a review of the evidence. Crit Rev Oncol Hematol 99: 308-323. [Crossref]

26. Roswall N, Weiderpass E (2015) Alcohol as a risk factor for cancer: existing evidence in a global perspective. J Prev Med Public Health 48: 1-9. [Crossref]

27. Greving JP, Lee JE, Wolk A, Lukkun C, Lindblad P, et al. (2007) Alcoholic beverages and risk of renal cell cancer. Br J Cancer 97: 429-433. [Crossref]

28. Nicodemus KK, Sweeney C, Folsom AR (2004) Evaluation of dietary, medical and lifestyle risk factors for incident kidney cancer in postmenopausal women. Int J Cancer 108: 115-121. [Crossref]

29. Karami S, Daugherty SE, Purdue MP (2015) A prospective study of alcohol consumption and renal cell carcinoma risk. Int J Cancer 137: 228-242. [Crossref]

30. Zaitu M, Nakamura F, Toyokawa S, Tonoaka A, Takeuchi T, et al. (2016) Risk of Alcohol Consumption in Bladder Cancer: Case-Control Study from a Nationwide Inpatient Database in Japan. Tohoku J Exp Med 239: 9-15. [Crossref]

31. Washio M, Kiyohara C, Oura A, Mori M (2007) Smoking in Youth. A Review. In: Lapointe MM (eds). Adolescent Smoking and Health Research. Nova Biomedical Books, New York: 191-205.

32. Ozawa M, Washio M, Kiyohara C (2008) Factors related to starting and continuing smoking among senior high school boys in Fukuoka, Japan. Asian Pacific J Cancer Prev 9: 239-246. [Crossref]

33. Jiang X, Yuan JM, Skipper PL, Tannenbaum SR, Yu MC (2007) Environmental tobacco smoke and bladder cancer risk in never smokers of Los Angeles County. Cancer Res 67: 7540-7545. [Crossref]

34. Inoue M, Yamamoto S, Kurahashi N, Iwaisaki M, Sasazuki S, et al. (2008) Daily total physical activity level and total cancer risk in men and women: results from a large-scale population-based cohort study in Japan. Am J Epidemiol 168: 391-403. [Crossref]

35. Boorjian S (2013) Commentary on “The association between physical activity and renal cancer: systematic review and meta-analysis”. Behrens G, Leitzmann MF. Department of Epidemiology and Preventive Medicine, Regensburg University Medical Center, Regensburg, Germany. Br J Cancer 108: 798-811.

36. Williams PT (2014) Reduced risk of incident kidney cancer from walking and running. Med Sci Sports Exerc 46: 312-317. [Crossref]

37. Sakauchi F, Mori M, Washio M, Watanabe Y, Ozasa K, et al. (2005) Dietary habits and risk of urothelial cancer incidence in the JACC study. J Epidemiol 15: S190-195. [Crossref]

38. McLaughlin JK, Silverman DT, Hsing AW, Ross RK, Schoenberg JB, et al. (1992) Cigarette smoking and cancers of the renal pelvis and ureter. Cancer Res 52: 254-257. [Crossref]

Copyright: ©2017 Washio M. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.