

하루 한 두잔의 가벼운 음주도 암을 일으키는가?

명 승 권

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국민 암 예방 수칙 일부 개정

- 2016년 3월 21일 암 예방의 날 (보건복지부와 국립 암센터)
 - 제정 10주년이 된 암 예방 수칙 중 음주와 예방접 종에 대해 일부 개정을 발표함.
 - 기존: 술은 하루 두 잔 이내로만 마시기
 - 개정안: 암 예방을 위해서 하루 한 두잔의 소량 음 주도 피하기

국민 암 예방 수칙

1. 담배를 피우지 말고, 남이 피우는 담배 연기도 피하기
2. 채소와 과일을 충분하게 먹고, 다채로운 식단으로 균형 잡힌 식사하기
3. 음식을 짜지 않게 먹고, 탄 음식을 먹지 않기
4. 암 예방을 위해서 하루 한 두잔의 소량 음주도 피하기
5. 주 5회 이상, 하루 30분 이상, 땀이 날 정도로 걷거나 운동하기
6. 자신의 체격에 맞는 건강 체중 유지하기
7. 예방접종 지침에 따라 B형 간염과 자궁경부암 예방접종 받기
8. 성 매개 감염병에 걸리지 않도록 안전한 성생활 하기
9. 발암성 물질에 노출되지 않도록 작업장에서 안전 보건 수칙 지키기
10. 암 조기 검진 지침에 따라 검진을 빠짐없이 받기

국민 암 예방 수칙 일부 개정 근거(보도자료)

- 국제암연구소(IARC): 음주는 1군 발암요인으로, 음주에 의해 구강암, 인후 암, 후두암, 식도암, 간암, 유방암, 직장·대장암 발생 위험이 증가함
- 해외 연구에서도 소량의 음주(하루 1-2잔)로 구강암, 식도암, 유방암, 간암, 대장암 발생이 증가한다는 연구 결과가 다수 보고
 - 1) EU 암예방 권고사항: 음주 부분은 기존 '남자 2잔, 여자 1잔 이내(2003년)'에서 '암 예방을 위해서 음주하지 말 것(2014년)' 으로 개정(Scozzianti et al, Cancer Epidemiol, 2015)
 - 2) 가벼운 음주(하루 1잔, 알코올 섭취량 12g 이하)에도 암 발생 위험은 구강인두암 17%, 식도암 30%, 유방암 5%, 간암 8%, 대장암 7% 증가(Bagnardi et al, Annals of Oncology, 2013)
 - 3) 미국 간호사 10만명을 추적 관찰한 연구에 의하면, 일주일에 3~6잔 (하루 알코올 섭취량 5~10g)의 음주로 유방암 발생 위험이 15% 증가

문제점 (1) – EU 권고안의 오류

- 각 암종에 대해 환자-대조군 연구와 코호트 연구 결과 의 차이를 구분하지 않음.
- 대장암의 경우 가벼운 음주가 아니라 중등도 음주의 결 과를 잘못 인용함.

Table 3. Pooled RR estimates for colorectal cancer incidence stratified by colon site, sex, geographical region, and potential modifying factors

| Factors stratified | Drinkers versus non-occasional drinkers ^a | | | | | Light versus non-occasional drinkers ^a | | | | | Moderate versus non-occasional drinkers ^a | | | | | Heavy versus non-occasional drinkers ^a | | | | | |
|--------------------|--|----|------|------|----------------------|---|------|------|------|----------------------|--|------|------|------|----------------------|---|------|------|------|----------------------|------|
| | No. of studies ^b | RR | LCI | UCI | P value ^c | No. of studies ^b | RR | LCI | UCI | P value ^c | No. of studies ^b | RR | LCI | UCI | P value ^c | No. of studies ^b | RR | LCI | UCI | P value ^c | |
| All studies | 57 | | 1.12 | 1.06 | 1.19 | 49 | 1.00 | 0.95 | 1.05 | | 53 | 1.21 | 1.13 | 1.28 | | 19 | 1.52 | 1.27 | 1.81 | | |
| Site | | | | | | | | | | | | | | | | | | | | | |
| Colon | 42 | | 1.05 | 0.99 | 1.12 | 0.03 | 36 | 0.96 | 0.90 | 1.02 | 0.05 | 39 | 1.15 | 1.06 | 1.24 | 0.27 | 16 | 1.43 | 1.23 | 1.67 | 0.56 |
| Rectum | 38 | | 1.19 | 1.09 | 1.31 | | 32 | 1.06 | 0.98 | 1.14 | | 35 | 1.23 | 1.13 | 1.35 | | 15 | 1.59 | 1.18 | 2.15 | |

“가벼운 음주(하루 1잔, 알코올 섭취량 12g 이하)에도 암 발생 위험은 구강인두암 17%, 식도암 30%, 유방암 5%, 간암 8%, 대장암 7% 증가 (Bagnardi et al, Annals of Oncology, 2013)”

Background: There is convincing evidence that alcohol consumption increases the risk of cancer of the colorectum, breast, larynx, liver, esophagus, oral cavity and pharynx. Most of the data derive from studies that focused on the effect of moderate/high alcohol intakes, while little is known about light alcohol drinking (up to 1 drink/day).

Patients and methods: We evaluated the association between light drinking and cancer of the colorectum, breast, larynx, liver, esophagus, oral cavity and pharynx, through a meta-analytic approach. We searched epidemiological studies using PubMed, ISI Web of Science and EMBASE, published before December 2010.

Results: We included 222 articles comprising ~92 000 light drinkers and 60 000 non-drinkers with cancer. Light drinking was associated with the risk of oropharyngeal cancer [relative risk, $RR=1.17$; 95% confidence interval (CI) 1.06–1.29], esophageal squamous cell carcinoma (SCC) ($RR=1.30$; 95% CI 1.09–1.56) and female breast cancer ($RR=1.05$; 95% CI 1.02–1.08). We estimated that ~5000 deaths from oropharyngeal cancer, 24 000 from esophageal SCC and 5000 from breast cancer were attributable to light drinking in 2004 worldwide. No association was found for colorectum, liver and larynx tumors.

Conclusions: Light drinking increases the risk of cancer of oral cavity and pharynx, esophagus and female breast.

Key words: alcohol, cancer, lifestyle, meta-analysis, public health, risk factor

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REVIEWS

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Light alcohol drinking and cancer: a meta-analysis

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Conclusions: Light drinking increases the risk of cancer of oral cavity and pharynx, esophagus and female breast.

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Introduction

The broad range of alcohol consumption patterns, from heavy to occasional/binge drinking, creates significant public health and safety problems in nearly all countries. Globally, 4.7% and 1.9% of all male and female deaths are attributable to alcohol, and to 2001 over 2.2 million deaths were related to alcohol worldwide [1].

Regarding the association with cancer, 30% of all cancers (5.2% in men, 1.7% in women) are attributable to alcohol drinking [2]. There is convincing evidence that alcohol consumption increases the risk of cancer in the colorectum, breast, liver, larynx, oral cavity and pharynx [3] and a substantial increase in the risk of cancer with increasing dose of alcohol was observed for all these cancers [4]. Most of the evidence on the alcohol-cancer link derive from studies that focused on high and moderate intake of alcohol, therefore a solid evidence of an association between low levels of alcohol intake and cancer is still lacking. From a public health point of view, it is of considerable interest to establish whether light drinking is associated with cancer, even if it implied only a weaker risk increase. In fact, a risk increase of small magnitude affecting a large proportion of population could convert into major negative health impact [5, 6].

Therefore, to clarify this issue, we carried out a meta-analysis of published studies to evaluate the association between light drinking (defined as up to 1 drink/day) and cancer.

Materials and methods

search strategy

We carried out investigations on light drinking in three bases for which there is evidence of an increased risk associated with alcohol consumption in general. For the purposes, we used three key publications drawn up by the International Agency for Research on Cancer [7], which listed all the known sites in which heavy alcohol intake was

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Table 2. Comparison of pooled relative risks between main population and study characteristics

| Cancer site | Study design | | P ^a | Geographical area ^a | | | P ^a | Sex ^a | | P ^a |
|-------------------------|-------------------|-------------------|----------------|--------------------------------|-------------------|-------------------|----------------|-------------------|-------------------|----------------|
| | Cohort | Case-control | | Europe | North America | Asia | | Men | Women | |
| | RR (95% CI) | RR (95% CI) | | RR (95% CI) | RR (95% CI) | RR (95% CI) | | RR (95% CI) | RR (95% CI) | |
| Oral cavity and pharynx | 1.01 (0.70, 1.45) | 1.22 (1.11, 1.35) | 0.312 | 1.44 (0.87, 2.37) | 1.15 (1.01, 1.30) | 1.34 (1.06, 1.68) | 0.395 | 1.20 (1.06, 1.36) | 1.09 (0.89, 1.34) | 0.436 |
| Esophageal SCC | 1.34 (0.96, 1.87) | 1.28 (1.04, 1.59) | 0.840 | 1.05 (0.79, 1.38) | 1.21 (0.96, 1.54) | 1.49 (1.12, 1.98) | 0.212 | 1.46 (1.19, 1.80) | 1.28 (0.84, 1.96) | 0.585 |
| Colorectum | 1.00 (0.95, 1.05) | 0.98 (0.91, 1.06) | 0.801 | 1.01 (0.95, 1.07) | 0.97 (0.91, 1.04) | 1.03 (0.90, 1.19) | 0.403 | 1.05 (0.95, 1.16) | 0.93 (0.87, 0.99) | 0.052 |
| Liver | 1.00 (0.85, 1.18) | 1.10 (0.86, 1.41) | 0.543 | 1.10 (0.77, 1.58) | 0.92 (0.56, 1.51) | 1.02 (0.89, 1.17) | 0.835 | 0.99 (0.89, 1.10) | 1.00 (0.64, 1.57) | 0.954 |
| Larynx | 0.96 (0.71, 1.30) | 0.83 (0.63, 1.09) | 0.487 | 0.84 (0.43, 1.62) | 0.89 (0.66, 1.20) | 0.91 (0.60, 1.37) | 0.978 | 0.89 (0.67, 1.16) | 0.93 (0.71, 1.22) | 0.802 |
| Breast (female) | 1.05 (1.02, 1.09) | 1.05 (1.01, 1.10) | 0.955 | 1.05 (0.98, 1.12) | 1.06 (1.02, 1.09) | 1.01 (0.89, 1.14) | 0.756 | – | 1.05 (1.02, 1.08) | – |

^aStudies conducted in other/mixed geographical areas were not considered in the heterogeneity analysis.
^bChi-square testing homogeneity of pooled estimates among strata.
 RR, relative risk; CI, confidence interval; SCC, squamous cell carcinoma.

국민 암 예방 수칙 일부 개정에 대한 의견 요약

- 1) 근거수준의 견지에서 보았을 때 일반적으로 환자-대조군 연구는 선택비뮐링, 회상비뮐링과 같은 비뮐링이 있기 때문에 코호트 연구보다 근거수준이 낮은 것으로 봐야함. 그렇기 때문에 같은 주제에 대해서 환자-대조군 연구 결과와 코호트 연구결과가 다르다면 코호트 연구결과를 신뢰해야 함.
- 2) 하루 한 두 잔의 (가벼운)음주가 암의 위험성을 높인다는 근거는 주로 환자-대조군 연구를 종합한 결과이며 코호트 연구를 종합했을 때는 light drinking이 일반적으로 암의 위험성을 높인다고 결론을 내리기에는 근거가 불충분함. 유방암의 경우에는 약간의 위험성을 높이는 것으로 사료되나 보다 충분한 코호트 연구 결과에 대한 메타분석이 필요함.
- 3) 개정안과 관련해 관련 분야 전문가들의 재논의가 필요함.

Letter to the Editor

Letter to the Editor

Insufficient evidence on the association between light alcohol drinking and the risk of cancer in the need for correction of the meta-analysis: Erratum against cancer meta-analysis

While in 2003, the European Code against Cancer (ECAC) 1st Edition recommended that "If you drink alcohol, whether less or more, moderate your consumption to less than 20 g/day if you are a man or less than 10 g/day if you are a woman" [1]. In December 2015, however, the International Agency for Research on Cancer (IARC) published an article entitled the ECAC 2nd Edition Alcohol drinking and cancer in the journal [2]. Stating that "20-24 g/day moderately increase the risk of developing cancer" in strongly associated with cancer of the esophagus, stomach, nasopharynx, liver, colorectal, and female breast, even for low alcohol consumption, the article concluded that the consumption of the very lowest ECAC in "You can drink alcohol of any type, but your intake for drinking alcohol is better for cancer prevention" based on the review of the recent observational epidemiological studies and meta-analysis [3]. That is, the ECAC has revised its recommendation in alcohol studies from light drinking to moderate because of recent light alcohol drinking, which is not the drinking level that is the risk of cancer, as at all of the studies can confirm the risk of cancer, however, I claim that this new ECAC on alcohol should be corrected because there were still flaws in the interpretation and citation of the findings from the observational epidemiological studies and meta-analysis and accordingly insufficient evidence on the association between light alcohol drinking and the risk of cancer.

The authors participating in the review of the ECAC 2nd Edition did not mention the fact that a meta-analysis of light alcohol drinking and cancer risk was not included in the meta-analysis of light alcohol drinking and cancer risk in the ECAC 2nd Edition. Therefore, I suggest that the ECAC on alcohol drinking should be corrected as follows: "If you drink alcohol, whether less or more, moderate your consumption to less than 20 g/day if you are a man or less than 10 g/day if you are a woman. However, not drinking is better for breast cancer prevention in women."

Conflicts of interest
None.

Funding
None.

References
1. European Code against Cancer (ECAC) 1st Edition. *European Code against Cancer*. London: European Code against Cancer; 2003. p. 1-10.
2. International Agency for Research on Cancer. *Alcohol drinking and cancer*. Lyon: International Agency for Research on Cancer; 2015. p. 1-10.
3. International Agency for Research on Cancer. *Alcohol drinking and cancer*. Lyon: International Agency for Research on Cancer; 2015. p. 1-10.

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letter to the editor

Erroneous conclusions about the association between light alcohol drinking and the risk of cancer: comments on Bagnardi et al.'s meta-analysis

In December 2015, the European Code against Cancer (ECAC) 2nd Edition [1] recommended that "If you drink alcohol of any type, but your intake for drinking alcohol is better for cancer prevention" based on the review of the recent meta-analysis, as at all of the reported meta-analysis studies the risk of cancer, although light, increased by 1.1-1.3% for every 10 g/day increase in alcohol intake. However, this recommendation is based on the review of the recent meta-analysis, as at all of the reported meta-analysis studies the risk of cancer, although light, increased by 1.1-1.3% for every 10 g/day increase in alcohol intake. However, this recommendation is based on the review of the recent meta-analysis, as at all of the reported meta-analysis studies the risk of cancer, although light, increased by 1.1-1.3% for every 10 g/day increase in alcohol intake.

Conflicts of interest
None.

Funding
None.

References
1. European Code against Cancer (ECAC) 2nd Edition. *European Code against Cancer*. London: European Code against Cancer; 2015. p. 1-10.

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letter to the editor

Reply to the letter to the editor 'Erroneous conclusions about the association between light alcohol drinking and the risk of cancer: comments on Bagnardi et al.'s meta-analysis, by S.-K. Myung'

Professor Myung questioned [1] our conclusions on the positive association between light alcohol drinking and the risk of cancer of the oral cavity and pharynx and cancer of the esophagus [2]. This criticism was based on the fact that the meta-analysis of light alcohol drinking and cancer risk was not included in the meta-analysis of light alcohol drinking and cancer risk in the ECAC 2nd Edition. Therefore, I suggest that the ECAC on alcohol drinking should be corrected as follows: "If you drink alcohol, whether less or more, moderate your consumption to less than 20 g/day if you are a man or less than 10 g/day if you are a woman. However, not drinking is better for breast cancer prevention in women."

Conflicts of interest
None.

Funding
None.

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Conflicts of interest
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Funding
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