Chronic alcohol consumption (1)
- Difficulties to establish scientific relationship between alcohol consumption and digestive cancer
- Based on epidemiological data (social impact of alcohol, e.g.) regarding to:
  - Way of living
  - Alimentary habits
  - Chronic alcohol abuse
  - Environmental factors
  - Geography...

Chronic alcohol consumption (2)
- Data: Heavy drinkers are more exposed to develop digestive cancer than general population

EPIC approach: 500,000 persons followed in several countries in Europe (+ 10 years)
Chronic alcohol and cancer (1)

- Dose-dependent (impact of moderate consumption is not clear)
- The begin of alcohol abuse
- Duration of consumption
- Influence roles of:
  - Genetic polymorphism
  - Environmental and individuals factors (alimentary habits, consumption before or while eating, way of life, sex.)
  - Geography (Calvados,...)

Chronic alcohol and cancer (2)

- Synergetic effect of alcohol and cigarettes
  - 40 gram and 10 cigarettes /day increase the risk of cancer by 10.
  - 80 grams and 30 cigarettes /day increase the risk by 100.

 2nd cause of avoidable cancer

Chronic alcohol and cancer (3)

- 10 grams of alcohol =
  - 1 glass of wine or champagne (10 cl.)
  - 1 glass of beer (25 cl.)
  - 1 glass of whisky 40% (3 cl.)
  - 1 glass of pastis 45% (3 cl.)

Mechanisms (1)

- Ethanol seems not to be carcinogenic. But his main metabolite Acetaldehyde and free metabolites generated are mutagenic and carcinogenic (direct toxicity on DNA, enzymes of repair,...)
- Ethanol increases the permeability of intestinal mucosa (atrophy) for carcinogenic agents
- In heavy drinkers: decreases intestinal intake of vitamins and some others rich nutritious food... The consequence is: reduction of resistance to infections and cancers
Alcohol and Digestive Cancer

Mechanisms (2)

- Alcohol
- Acetaldehyde (toxic)
- Acetate (non-toxic)
- Acetate (free metabolites (toxic))

Mechanisms (3)

- Genetics variability of some enzyme as alcohol dehydrogenase:
  - Less in Asian and African people
  - Men > Women
  - Toxic effects appear earlier for the same consumption

Chronic alcohol and cancer

- Alcohol consumption is a significant risk factor for:
  - The upper alimentary tract (oro-pharynx and oesophagus)
  - The liver
  - The synergetic role of the association alcohol and cigarettes is clearly evident for the upper digestive tract
  - There is not enough evidence for:
    - Gastric, pancreatic and colonic cancers

Liver and cancer (1)

- USA and Italy: 30 to 45 % of liver cancer is due to alcohol
- There is a sequence in heavy drinkers:
  - Normal → Chronic hepatitis → Steatosis → Cirrhosis → Fibrosis
  - Hepatocellular carcinoma 80-90%
  - Stage 1 & 2: reversible state if they stop drinking
Liver and cancer (2)

- Associated factors:
  - HBV
  - HCV
  - Hemochromatosis
  - Obesity
  - Diabetes...

- USA (Morgan 2004):
  - Consumption > 80g/d for more than 10 years leads to liver cancer 5 times more than general population.
  - 11/100,000 in male
  - In France the incidence is:
  - 1.5/100,000 in female

Liver and cancer (3)

- Treatment (after evaluation of numbers and sizes of lesions and gravity of the underlying cirrhosis):
  - In a curative goal:
    - Liver transplantation
    - Surgery
    - Percutaneous destruction
  - In a palliative goal:
    - Chemoembolization
    - Drugs
    - Supportive care

Liver and cancer (4)

- Prognostic:
  - Survey at 5 years:
    - Small lesions (30%): 50-70%
    - Evolution (40%): < 10%
    - Terminal (20%): -

Oesophagus and cancer (1)

- In France:
  - 5200 new cases/year
  - Third digestive cancer
  - M/W: 12
  - 4th cause of death by cancer (lung, colonic cancer and prostate)
- Association with other diseases due to alcohol and tobacco (liver, lung and coronary,...)
- Bad prognostic in late diagnosis (very often)
- Two types:
  - Epidermoid carcinoma (%), the association with alcohol and smoking is clear
  - Adenocarcinoma (%), no association
Oesophagus and cancer (2)

- Treatment (after staging):
  - Surgery
  - Chemotherapy
  - Radiotherapy
  - Endoscopy (if it is superficial lesion)
  - Or a mix

- Prognosis:
  - 1976-1978, survey at 5 years: 5%
  - 1994-1996, survey at years: 10%
  - 2004-2006, survey at 5 years: 15-20%

Conclusion (1)

- The risk of cancer in heavy drinkers (> 80g/d) are clearly established in oesophagus cancer and in hepatocellular carcinoma
- The association with smoking is synergetic (specially in the cancer of the upper digestive tract)
- There is no evidence at this time of an increasing risk in moderate consumption

Conclusion (2)

- Recommendations:
  - STOP SMOKING
  - Moderate Alcohol Consumption:
    Man: 20 to 40 g/d
    Woman: 10 to 30 g/d