Research priorities/directions in Asia

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Asia: rapid economic developments

• Most of research findings on food, nutrition, physical activity (FNPA) and prevention of cancer are from the West.

• Asia: rapid economic development, urbanisation, westernisation in past few decades versus traditional cultures of many centuries

• Growing cancer epidemic - but at an early stage

• Changing patterns in risk factors/aetiology, diagnosis, screening, treatment and survival

• Awareness is low and prevention and research lagging behind
Asia and the West

• Different patterns of cancer epidemic: in the short-term only (a few decades)?
• When the epidemic has “matured”?
• For cancer as a whole, or for specific cancer?
  Example of lung cancer and smoking
• What can Asia learn from the West on FNPA and prevention?
• Great variations within Asia: Changes in FNPA related traditional cultures and westernisation are different
• Locally specific cancers remain common:
  eg. nasopharyngeal cancer, liver cancer, stomach cancer
• But tobacco-related and Western lifestyle related cancer increasing especially in the more developed (higher income) countries: eg. lung cancer, breast cancer and colorectal cancer
Asia can contribute to cancer research

• Big populations, great diversity, relatively low costs, research capacity expanding, increasing motivation and commitment, eager to learn
• Some unique or Asia-specific cancer patterns and exposures, different lifetime and lifecourse from under-developed to highly developed economic environments and possibly some unique genetic patterns
• Aetiology, gene-environmental interaction and epigenetic effects, lifestyle and lifecourse factors/exposures, Mendelian randomisation
• East-West collaboration
Aetiological studies/risk factors in Asia

• Well known risk factors in the West:
  eg. smoking
  Local studies: strong local political impacts on raising awareness and prevention policies
• Less well known risk factors in the West:
  eg. Alcohol and DNPA
• Asian studies can contribute globally especially when they include heart disease
• Locally relevant suspected harmful or protective factors can yield original results
  eg. salted fish and NPC, and contaminants
  eg. ginseng, soya bean, traditional Chinese herbal medicine or ingredients
Case control studies

- Most common and is still most important in Asia
- Previous studies - low cost, lack of biomarkers, quality not very high
- New and large studies with improved methods: confirmation of cases and standardised sub-typing (eg. lymphoma)
- Selection of controls (hospital or community based?)
- Genetic and other molecular factors (Mendelian randomisation)
• Pilot studies to select more relevant SNPs or haplotypes
• Collection of pathological and other biospecimens
• Over-emphasis on genetic factors - using most resources, leaving little for collection of better lifetime/lifecourse exposure data and other biomarkers
Cohort studies in Asia

- Large cohort studies are rare and all lack funding
- Most of the existing cohorts have difficulties in follow up, especially for repeated measures of exposures and for biomarkers
- Also difficulties in following up for incident cases and confirmation and typing of cancer because such cases occur in different hospitals and cooperation is not always easy
• Biobanks are being established with good potentials but funding is lacking (eg. Guangzhou Biobank Cohort Study with 30,000 aged 50+ recruited from 2003 to 2008, with 15,000 completed re-examination)

• Few funding agencies have the mechanism to support cohort study set up, re-examination and maintenance in Asia
COHORT PROFILE

Cohort Profile: The Guangzhou Biobank Cohort Study, a Guangzhou–Hong Kong–Birmingham collaboration

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Multi-centre collaboration and individual data meta-analysis

• Most cost effective
• Studies not originally designed for specific hypotheses on FNPA and cancer
• FNPA data are problematic for cohorts established earlier (>10 years ago) as compared to smoking and blood pressure.
• But data on cholesterol, glucose, etc are better despite different assay methods
• Asia Pacific Cohort Study Collaboration (APCSC) originally for cardiovascular disease and extended to include cancer: new funding is warranted for expansion, updating exposure and follow up
Introduction

The APCSC is a collaborative project that seeks to pool data from existing longitudinal studies with information on cardiovascular disease in the Asia Pacific.

The project’s main research themes are:

- risk factors for cardiovascular disease
- interactions between risk factors for cardiovascular disease
- prevalence and attributable risk for five major cardiovascular disease risk factors
- the relationship of cancer incidence to cardiovascular disease risk factors

The APCSC database now has data on over 850,000 participants from 44 separate cohort studies in mainland China, Hong Kong, Taiwan, Japan, South Korea, Singapore, Thailand, New Zealand and Australia. It is considered the largest epidemiological collaboration in the southern hemisphere and in the top five of the world’s largest medical studies.

To date, over 40 papers from the project have been published or are in press in international peer reviewed journals.
Papers published on cancer:

- Colorectal - lifestyle
- Prostate - modifiable risk factors
- Lung - smoking, smoking cessation
- Upper aero-digestive - smoking, alcohol
- Liver - obesity
- Cancer - BMI
- Cancer - diabetes mellitus
Prevention research

• Good prevention research on FNPA in Asia is rare
• Randomised controlled trials (RCT) are needed
• Much can be learnt from smoking cessation trials (with or without medications) but RCT on FNPA are more difficult
• Some RCT in Asia eg. on Taichi, can provide useful experiences
• What should be the primary outcomes?
  - Cancer incidence takes many years
  - Biomarkers of cancer?
  - Behaviours, exposures or risk fac
Research on cancer patients

- Traditional cultures/beliefs in Asia and advices from Western physicians are often confusing.
- Observational studies on FNPA on cancer patients or survivors are cheaper and prospective studies with long follow up (at least 3 to 5 years) are feasible.
- But difficult to separate effects of pre-cancer exposures from changes in exposure after diagnosis.
RCT on prevention is the best

• RCT are needed and should be encouraged
• Trials on nutrient supplements or changes in dietary intake and reducing harmful exposures (eg. quitting smoking and drinking) can contribute new knowledge (strong evidence from preventive trials)
• Outcomes on survival and quality of life are relevant and important
• Multi-centre trials needed
• Much cheaper in Asia
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