



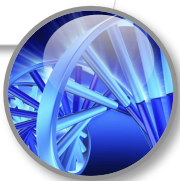
ARE ENDOCRINE DISRUPTING COMPOUNDS RISK FACTORS FOR LARGE BOWEL ADENOCARCINOMA?

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INTRODUCTION

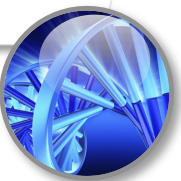
Endocrine disrupting compounds (EDCs) such as certain organic solvents, pesticides, and PCBs are exogenous substances that can affect the natural hormone balance and are a suspected cause of carcinogenesis in the human organism.

The aetiology of colon cancer is multifactorial. It has been hypothesised that endogene and exogene hormones play a part in the carcinogenesis of colon cancer. If this is accurate, it can function as a pathway for EDC's role in colon cancer.



AIM

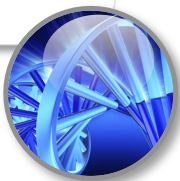
This study investigated the association between occupational exposure to EDC (pesticides and hormones) and the development of colon cancer.



METHODOLOGY

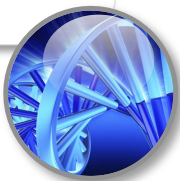
A case-control study of 254 histologically confirmed colon cancer cases (59%) and 320 matched population controls (55%) was conducted between 1995-1997 in Denmark as part of a European multi-center study.

The participants had been interviewed by trained interviewers about socio-demographical aspects and occupational exposure to EDCs using a standardized questionnaire especially designed for this study.



METHODOLOGY (CONTINUED)

We obtained odds ratios (OR) and 95% confidence interval (95% CI) by multiple logistic regression and adjusted for age, sex and education. Furthermore, we adjusted for smoking, alcohol, BMI and with regard to women hormone-replacement therapy and contraceptive pills.

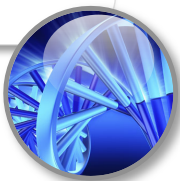


RESULTS

After adjustment for relevant confounders, the OR for ever being occupationally exposed to pesticides was 0,56 (95% CI 0,28-1,11).

Subsequently, pesticides were divided into three subgroups: fungicides resulted in an OR 0,39 (95% CI 0,13-1,12), herbicides OR 0,39 (95% CI 0,16-0,95) and insecticides OR 0,41 (95% CI 0,16-1,04).

Occupational exposure to hormones showed a similar association with an OR 0,84 (95% CI 0,39-1,81).



RESULTS – TABLE 1

Odds ratio and 95% confidence interval for colon cancer and occupational exposure to hormones or pesticides

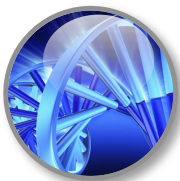
	Cases		Controls		OR	95% CI	OR ¹	95% CI ¹	OR ²	95% CI ²
	n	%	n	%						
Hormones³	12	4,7	21	6,6	0,71	(0,34-1,47)	0,75	(0,36-1,59)	0,84	(0,39-1,81)
Pesticides⁴	15	5,9	36	11,3	0,50	(0,27-0,94)	0,54	(0,28-1,05)	0,56	(0,28-1,11)
- herbicides	8	3,3	27	8,7	0,36	(0,16-0,80)	0,37	(0,16-0,85)	0,39	(0,16-0,95)
- insecticides	7	2,8	23	7,2	0,37	(0,16-0,88)	0,40	(0,16-0,98)	0,41	(0,16-1,04)
- fungicides	5	2,0	19	5,9	0,32	(0,12-0,86)	0,35	(0,12-0,92)	0,39	(0,13-1,12)

¹ Odds ratio with 95% confidence interval adjusted for sex, age and education

² Odds ratio with 95% confidence interval adjusted for sex, age, education, smoking, alcohol, BMI max and former use of hormone-replacement therapy and/or contraceptive pills for women

³ Ever working with chemicals with hormonal effect

⁴ Ever working with pesticides

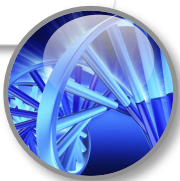


DISCUSSION

The data showed a negative association between exposure to pesticides and hormones in the workplace and the risk of colon cancer.

Most of the results were non-significant due to a small number of cases. However, several confounders were considered and if possible adjusted for, case status were histologically verified, and a small degree of bias. All factors contributing to a high validity of the study.

Due to the questionnaire it was not possible to adjust for physical activity, family history of colon cancer, diet nor leisurely exposure.



CONCLUSION

All though we found an inverse relationship between occupational exposure to EDC's and the development of colon cancer, the literature on the area is limited and the topic warrants further investigation.

