Cystic Fibrosis Research News

Title:
Occurrence, outcomes and predictors of portal hypertension in cystic fibrosis: a longitudinal prospective birth cohort study.

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What was your research question?
1) Should the population of origin (PO) be used to determine the occurrence of PH-portal hypertension(varicose veins in the lining of the gut) due to scarring of the liver(cirrhosis)?
2) Do liver function tests early in life predict this occurrence?

Why is this important?
Using people treated from birth in specific centres ensures only those in the group that came from that centre are followed up and therefore provides a true estimate of the later occurrence of PH. Specialist CF centres, for example those attached to a transplant service, will accept referrals for people with PH for liver transplant. If we use these to calculate how often PH occurs, the numbers are inflated and we risk over-estimating the true occurrence. Finding a reasonable reliable marker of PH will be useful in drug trials, for example comparing those with positive versus negative markers.

What did you do?
Individuals taking part in the study were diagnosed with CF by newborn screening and they underwent a physical examination of their abdomen at birth and annually thereafter by doctors with experience in CF with gut and liver disease. If the doctors found the spleen was enlarged, this was confirmed by ultrasound. The frequency of occurring (prevalence) of PH was calculated as the percentage of patients at VCFC and CHW and in the combined centre data. The same process was undertaken for the blood liver function tests (LFt's). The sets of LFt's measured close to their birthdays were used in statistically analysing the data as likely predictors of PH.

European Cystic Fibrosis Society

Journal of Cystic Fibrosis
The Official Journal of the European Cystic Fibrosis Society

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What did you find?

The proportion of people developing PH at VCFC and CHW were very similar (VCFC 8.6%, CHW 9.0%) with the combined clinic data 8.9%. The average age of onset of PH was 10 years. Rate of death and transplant were a lot higher in those with PH (23.5%) compared to those who did not have PH (5%); the non-PH group only had lung transplants.
If two of the three LFt's were elevated at least twice in the first 6 years of life it was very likely that PH would develop later.

What does this mean and reasons for caution?

By firstly restricting the population to those treated in each clinic from birth and not including "outsider" patients referred for the evaluation of PH or for transplant; and by secondly doctors consistently and accurately recording their findings from the annual examination , we have produced a true reflection of the natural history of the onset of PH in CF mid-childhood. This appears to be one of the first studies to do this. Caution is needed regarding interpretation of the enzyme data; we acknowledge it is unreliable in predicting the occurrence of PH in individuals and can only predict the occurrence of PH in a specific group of patients.

What's next?

A large multinational study is now underway to assess whether the drug ursodeoxycholate can safely prevent the onset of PH and treat liver disease after the onset of PH. The results are awaited with interest.

Original manuscript citation in PubMed

https://www.ncbi.nlm.nih.gov/pubmed/?term=Occurrence%2C+outcomes+and+predictors+of+portal+hypertension+in+cystic+fibrosis%3A+a+longitudinal+prospective+birth+cohort+study.