YOU CAN TEACH AN OLD DRUG NEW TRICKS

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1. IDENTIFY THOSE MOST AT RISK

- Very high asbestos exposure
- Early tumour growth
- Post-surgical removal

2. USE SAFE PREVENTATIVE DRUGS THAT COMBAT THE CARCINOGENIC EFFECTS OF ASPBESTOS

Prevention is an emerging field and can be applied in healthy populations to prevent disease initiation, in those with mild disease to prevent advancing disease, or in previously treated patients to prevent recurrence. It is therefore important that preventative drugs are safe and tolerable.

3. PREVENT GROWTH OR RECURRENCE, OR MAINTAIN GROWTH AT MANAGEABLE LEVEL

Most Mesotheliomas are believed to be preventable. Reducing exposure to asbestos has proven to be under-effective. As prevention is used in currently healthy populations, the side effects need to be minimal. Repurposed drugs are a good option for prevention as their side-effects are known. Ours include drugs previously used for colds, gout, and worms.

Repurposed drugs

- Very high asbestos exposure
- Early tumour growth
- Post-surgical removal

~3000 cases per year in the UK
84% cases in males
Half of cases in over 75s
10 year survival: 20% under 50, 1% over 50

Mesothelioma is an aggressive, insidious cancer caused almost exclusively by asbestos, with a latency period of ~50 years between exposure and diagnosis. Average survival is less than 12 months and treatment options are limited, only improving survival by a few months. Moreover, due to the old age of patients, many are too unfit for surgery or treatment. We aim to use safe, tolerable, and affordable drugs to prevent the development of cancer within the 50 year period between exposure and diagnosis.

How asbestos causes cancer following long-term exposure

Drug repurposing

Developing new drugs is timely and costly compared to finding new purposes for existing drugs. Approved drugs also have useful clinical information including side-effects and contra-indications. We tested the effect of a panel of 100 selected drugs on mesothelioma cells - individually and in combination - in the lab. The number of cells surviving following treatment was compared to untreated cells. The most effective single and combined drugs are shown below.

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1oz Prevention 1lb Cure

An ounce of prevention is worth a pound of cure

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