

OBSERVATIONAL STUDY OF CLINICAL TRIALS INVOLVING DRUG REPOSITIONING

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Background

Drug repositioning is a recent and growing concept involving the research of new indications for a drug, at a lower development cost. Thalidomide is an example of a successful drug repositioning [1]

Objectives

The objective was to analyse clinical trial data in order to describe the characteristics of repurposing clinical trials in comparison with other trials.

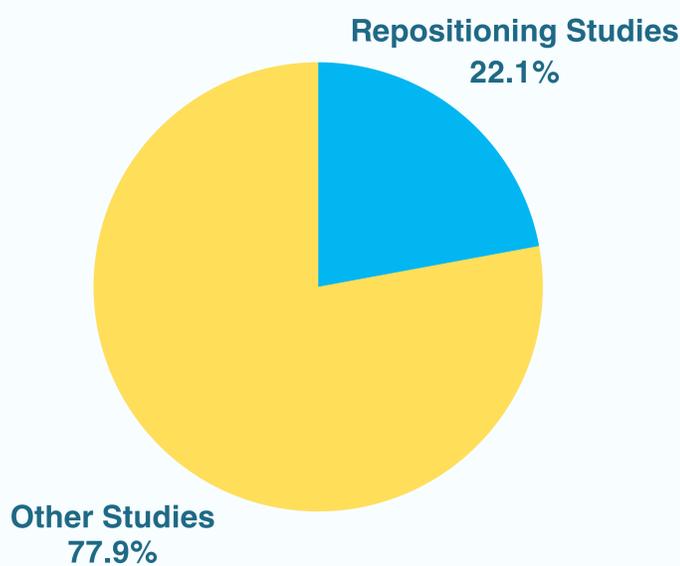
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All drug-related clinical trials were extracted from clinicaltrials.gov. For each drug, key pharmacological and administrative data were retrieved from Drugbank. A drug was considered repurposed if the protocol submission date was over 20 years after its patent date. Main trial features (phases, age, number of subjects, funding, study status and ATC class) were compared between repurposed and non-repurposed drugs.



Results

n = 96 705 studies



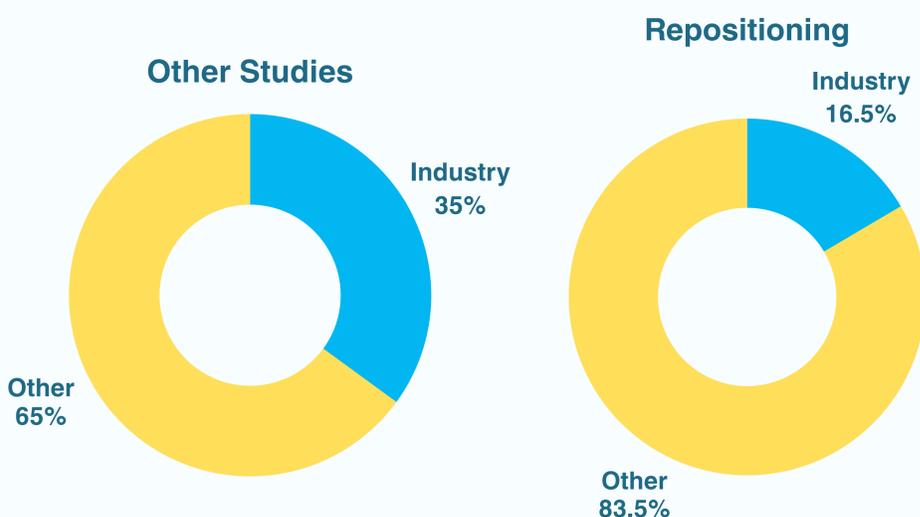
Repositioned drugs by ATC class

ATC Class	Repositioning	Other Studies	Total	Ratio
Anthelmintics	93	59	152	0.61
Antiinflammatory & Antirheumatics products	196	203	399	0.49
Stomatological prep.	167	176	343	0.49
Corticosteroids, Dermatological prep.	388	429	817	0.47
Throat prep.	86	101	187	0.46
Antibiotics for dermatological use	75	99	174	0.43
Calcium Channel Blockers	75	110	185	0.41
Antiemetics & Antinauseants	227	338	565	0.40
Antilipid agents	665	1,063	1,728	0.38
Anti-acne prep.	186	321	507	0.37

Study type	Number of Participants (mean ± sd)
Repositioning	2632 ± 189
Other Studies	871 ± 34

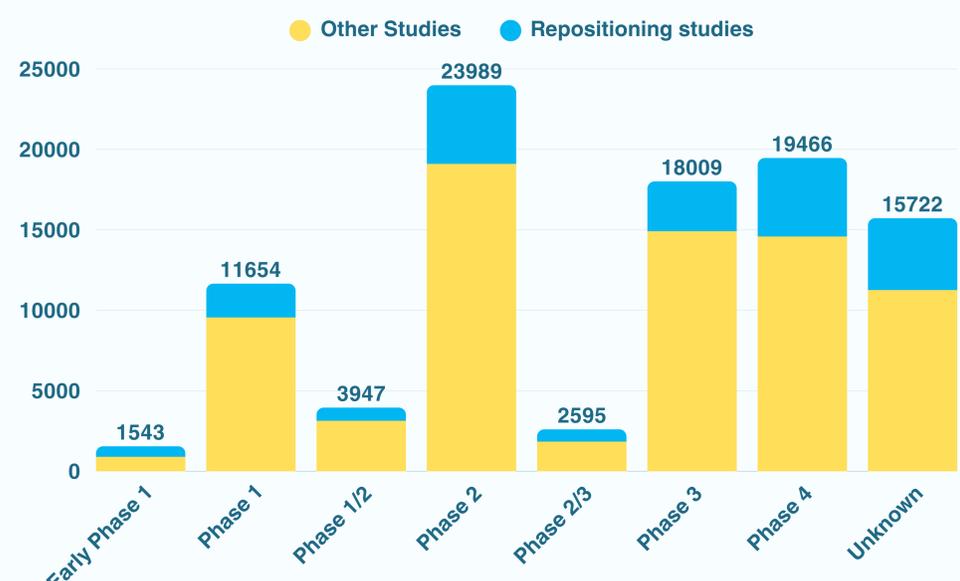
Study type	Adult Only n (%)	Children Included n (%)
Repositioning	62 956 (84%)	18 285 (86%)
Other Studies	12 388 (16%)	3076 (14%)

Sources of funding



Trial phases

Distribution is similar between study types



Conclusion

Our study has limitations, particularly with regard to the method used to define a repositioning study. Nevertheless, certain factors studied were surprisingly similar such as study phase and age of patients. However, the completion levels were much lower with repositioning studies. Industry funding was also much lower. This suggests lower funding in repositioning studies. Differences in ATC class illustrate a gap between traditional research and repurposing of older molecules.

