ity and fit better. As a measure of quality of the fitted model we have chosen the Deviance Information Criteria (DIC). The improvement in the deviance of the model for the number of principles per patient is of 1790 and in DIC of 1760. The maps reveal geographical inequalities and zones with greater average values. CONCLUSION: The Bayesian hierarchical models have been a very useful tool for incorporating geographical information in the analysis of pharmacological prescription data. They allow mapping spatial components expressing the trend of that geographical variation.

AZATHIOPURINE, TPMT POLYMORPHISMS AND ADRS: THE COST OF NEUTROPIA
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OBJECTIVES: Pharmacogenetics holds the promise of preventing adverse drug events (ADRs) but the diffusion of these diagnostic testis still limited. Assessing cost-effectiveness of pharmacogenetic interventions, a key to successful clinical implementation, requires access to data on ADRs and related costs which are not readily available. This study focuses on ADRs induced by azathioprine (AZA) treatment in Rheumatoid Arthritis and Inflammatory Bowel Disease patients, for whom there is a recognized association between the occurrence of severe neutropenia and the diminished activity of TPMT. The study aims at evaluating the availability and quality of cost data related to (i) the treatment and management of ADRs induced by AZA and (ii) the use of TPMT diagnostic kits in an average laboratory. The overall objective is to review the possibility of building a cost-effectiveness model on European data. METHODS: A literature review was conducted on PubMed and Embase databases. The clinical path for the management of AZA-induced ADRs was elaborated with an international panel of gastroenterologists/rheumatologists. RESULTS: Very few studies describe costs of treating ADRs induced by AZA. When present, costs are rarely collected empirically but derived from national tariff databases or from a single health care organization, resulting in a large variability. Reported costs are only direct, disregarding productivity losses, while ADRs often require hospitalization. Direct annual costs for ADRs range from €476 to €5505. It is equally difficult to identify solid data on the costs of TPMT diagnostic tests in an average European laboratory, with estimates between 70€ and 130€. CONCLUSION: Cost-effectiveness data might influence the degree of confidence of health care organizations in adopting new technologies. Published economic studies that evaluate TPMT diagnostic tests and the costs they might prevent are urgently needed.

ARTHRITIS—Methods and Concepts

MULTILEVEL ANALYSIS: A NOVEL APPROACH FOR STATISTICAL ANALYSIS OF LONGITUDINAL STUDIES IN ORTHOPAEDICS
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OBJECTIVES: Analysis of functional data from longitudinal studies is usually complicated by missing data. The use of repeated measures ANOVA for statistical analysis tends to decrease the sample size and thus affect power and significance of the results. The present study aims to address this problem with use of hierarchical regression or multilevel modeling. METHODS: We analysed functional results of 4777 patients following hip resurfacing arthroplasty. These patients were followed annually using Harris Hip score and Merle d'Aubigné score. Individual domains of Pain, mobility and range of movement were recorded. The scores comprised a follow up period of nine years with some missing values. The data was analysed using multilevel techniques in statistical package SYSTAT 11.0. Model was fitted at two levels, with level one being the scores and level two the patients. RESULTS: In all the domains of function, pain and movement, pre operative score and gender were significantly associated with post operative hip function (p < 0.005). A better pre op score predicted a better post op score and male gender was associated with better overall function. There was a consistent inverse relationship of overall functional improvement with individual domains of pain and movement. This implied that a good pre-operative pain score will have less improvement over time as compared to a poor pre-operative pain score. There was no significant effect of age on the overall functional results (p = 0.492). CONCLUSION: Functional outcome...