lowest threat where the effect of treatment is significant allows the selection of patients that could be mostly benefited with the treatment, the selection of the threshold with the minimum p-value will reflect the higher difference between treatments.

PM7: SYSTEMATIC LITERATURE REVIEW AND VALIDATION EVIDENCE OF THE EXPANDED DISABILITY STATUS SCALE (EDSS) AND THE MULTIPLE SCLEROSIS FUNCTIONAL COMPOSITE (MSCF) IN PATIENTS WITH MULTIPLE SCLEROSIS

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OBJECTIVES: There are a number of instruments to describe severity and progression of multiple sclerosis, which are increasingly used as endpoints to assess the effectiveness of therapeutic interventions. We examined to what extent the psychometric properties of the two accepted instruments - EDSS and MSCF – meet the methodological criteria and what value these instruments can provide for clinical trials. We conducted a systematic literature search in relevant databases [MEDLINE (PubMed), ISI Web of Science, EMBASE, PsyCINFO & PSYNDEx, CINAHL] yielding 3,860 results. The identification of relevant full-text publications was conducted using abstract and full-text search terms. All publications measuring validity, reliability, sensitivity of change of EDSS and MSCF, 120 relevant full-text publications were identified, 54 of them assessed the EDSS, the 26 MSCF and 40 included both instruments. The EDSS has some documented weaknesses in reliability and sensitivity to change. For the MSCF, the main limitations are the learning effects and the 2-scores method used to calculate the total score. However, the methodological quality of validity applies sufficiently for both instruments. For use in clinical trials, it has been found that the EDSS has better a primary and secondary outcome measure in recent studies (50 EDSS, 9 MSCF). CONCLUSIONS: Recognizing their strengths and weaknesses, both EDSS and MSCF are suitable to evaluate the effectiveness of clinical interventions on disease progression. Almost all publications identify the EDSS as the most widely used tool to measure disease outcomes in clinical trials. Despite some limitations, both instruments have been applied to a number of outcomes. MSCF is more used as a surrogate parameter. A great advantage of the EDSS is the international acceptance (e.g. by EMA) as a primary endpoint in clinical trials and its broad use in trials, enabling cross-study comparisons.

PM8: IMPACT OF MEDICATION ADHERENCE ON HEALTH CARE COST IN ASTHMA

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OBJECTIVE: To evaluate the impact of medication adherence on health care utilization and costs of the patients with asthma in Hungary. METHODS: The authors conducted a retrospective observation of the patients continuously enrolled in medical and prescription benefit plans from July 2007 to June 2012. The study is based on patient attendance data of Hungarian National Health Insurance Fund - NHIFA. The accessable resource uniquely contains the detailed provision data (medicine, out- and inpatient services) about the whole 10 millions Hungarian populations. Inclusion criterion for the patients was at least one diagnosis of asthma in inpatient or outpatient care (ICD code J45) and at least one relevant asthma therapy prescription in a twelve months period, and at least one relevant asthma therapy prescription during the following twelve months period. Disease-related and all-cause related medical costs, drug costs, and hospitalization risk were measured. These measures were modeled at varying levels of medication adherence using regression analysis. Adherence (Sokol, 2005) was defined as the percentage of days present on treatment during the analysis period that patients had a supply of 1 or more maintenance medications for the condition. The days of supply are calculated based on WHO DDD’s. This measurement strategy reduces the risk of overestimating adherence. For prescriptions extending beyond the end of the analysis period, days’ supply is truncated at the end of the period. Patients in each study sample are stratified into 5 categories based on their adherence score: 1–19%, 20–39%, 40–59%, 60–79%, or 80–100 %. RESULTS: High level of medication adherence was associated with lower hospitalization and exacerbation rates. CONCLUSIONS: Increased drug utilization can provide a net economic return when it is driven by improved adherence.

PM9: USING SATURN PLOTS TO DESCRIIBE CO-MORBIDITY PATTERNS WITHIN COHORTS

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OBJECTIVES: In December 2011 the Danish Government issued a new plan of action for chronic disease management in the Danish counties and DKK 100 million were granted to set up new positions as case managers to help vulnerable elderly patients. No precise job description was provided, however, and the Danish counties request evidence for the effect of case management (CM). The aim of this study was to 1) design a job description, and 2) design and or color to describe "high dimensional" data. The author will introduce a novel means of plotting the co-morbidity conditions that will afford investigators the ability to study patterns of co-morbidities simultaneously and understand the relationships among the variables on one display. RESULTS: The use of a novel graphical procedure (a Saturn plot) allows an investigator to examine co-morbidity patterns readily when the number of binary co-morbidities is 10 without having to resort to large tables of tabulated values based on co-morbidities. CONCLUSIONS: A newly developed graphical data method called a Saturn plot allows investigators to indentify the relative frequency of various subgroups (as defined by their co-morbidity pattern) within a cohort without the need to study large sets of tables.

PM11: DESIGN OF A RANDOMIZED CONTROLLED TRIAL (RCT) EVALUATING OUTCOME AND COST-EFFECTIVENESS OF A LOCAL CASE MANAGEMENT INTERVENTION OF PATIENTS SUFFERING FROM CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD)

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OBJECTIVES: To evaluate the impact of medication adherence on health care utilization and costs of the patients with COPD in Hungary. METHODS: The authors conducted a retrospective observation of the patients continuously enrolled in medical and prescription benefit plans from July 2007 to June 2012. The study is based on patient attendance data of Hungarian National Health Insurance Fund - NHIFA. The accessable resource uniquely contains the detailed provision data (medicine, out- and inpatient services) about the whole 10 millions Hungarian populations. Inclusion criterion for the patients was at least one diagnosis of asthma in inpatient or outpatient care (ICD code J45) and at least one relevant asthma therapy prescription in a twelve months period, and at least one relevant asthma therapy prescription during the following twelve months period. Disease-related and all-cause related medical costs, drug costs, and hospitalization risk were measured. These measures were modeled at varying levels of medication adherence using regression analysis. Adherence (Sokol, 2005) was defined as the percentage of days present on treatment during the analysis period that patients had a supply of 1 or more maintenance medications for the condition. The days of supply are calculated based on WHO DDD’s. This measurement strategy reduces the risk of overestimating adherence. For prescriptions extending beyond the end of the analysis period, days’ supply is truncated at the end of the period. Patients in each study sample are stratified into 5 categories based on their adherence score: 1–19%, 20–39%, 40–59%, 60–79%, or 80–100 %. RESULTS: High level of medication adherence was associated with lower hospitalization and exacerbation rates. CONCLUSIONS: Increased drug utilization can provide a net economic return when it is driven by improved adherence.

PM12: REVIEW OF META-ANALYSIS METHODS FOR MULTINOMIAL DATA

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OBJECTIVES: Indirect comparisons are often based on binary outcomes (e.g. relapse / remission) or continuous outcomes. In these cases logistic or linear models are applied to the indirect comparisons. However, sometimes datasets contain multinomial outcomes, such as ‘complete’, ‘partial’ and ‘no’ response in oncology, that need to be indirectly compared. With multinomial data, different indirect comparisons may be required to answer different research questions. Our goal was to identify and qualitatively compare the different techniques that have been used to model multinomial data in an indirect comparison framework. METHODS: A systematic review of the PubMed database was conducted to identify different methods for handling multinomial data. Results: Key terms: meta-analysis, ‘ordinal’, ‘ordered’, ‘multinomial’ and ‘proportional odds’, in various combinations. Models were qualitatively compared according to their assumptions, flexibility and sensitivity to change. RESULTS: The systematic review identified three methods: a proportional odds model, an ordered logistic model, and a multinomial model. The proportional
odds model has a natural interpretation of the treatment effect, is flexible in terms of handling data with different numbers of categories, but relies on the proportional odds assumption. The ordered logistic model also has a natural interpretation of the treatment effect, but increases in complexity when handling data with a large number of categories. The multinomial model’s interpretation for the treatment effect is difficult, but it can handle a large number of categories for unordered outcomes, such as risks and time dependent data.

CONCLUSIONS: There are three methods for incorporating multinomial data in a meta-analysis framework with various advantages and disadvantages. The appropriate model appears to be most dependent on the characteristics of the dataset. We determine that there is sufficient cause for future research focusing on a quantitative comparison of these different methods.

PM13 EASING DECISION-MAKING BY EXPANDING METHODS OF MULTIPLE COMPARISON TREATMENT ANALYSIS – INCORPORATING NON-COMPARATIVE DATA AND INFORMATIONAL PRIORS

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OBJECTIVES: While multiple comparison treatments (MTC) generally provide strong evidence, many are accompanied with uncertainty that makes life challenging for decision makers. Seeking reduction in uncertainty from non-comparative trial can ease decision-making, but the validity of this approach must be tested. Using an example of treatments for cryptococcal meningitis (CM), our objective was to assess the value and validity of incorporating non-comparative trial evidence via prior distributions in the Bayesian MTC framework. METHODS: We conducted a Bayesian MTC meta-analysis with informative priors (IP) and non-informative priors (NP) with 95% credible intervals (CrI). Non-comparative data were incorporated in a two-stage approach. First, meta-analysis for proportions was used to pool all relevant non-comparative outcomes for each treatment. Second, these results were used to construct informative priors for the comparative treatment effect parameters (the log odds ratios) in the Bayesian MTC. Treatments considered were amphotericin (AMb)-based therapy coupled either with fluconazole (FCZ), or voriconazole (VRC), or itraconazole (IRA) alone. RESULTS: We identified 25 non-comparative head-to-head drug comparison trials and 12 studies evaluating a single drug, described early mortality. Twenty-nine studies, 17 head-to-head and 12 single-arm studies, described late mortality. Incorporating non-comparative trials via informative priors improved the precision of several comparisons. For early mortality for example, the OR for AMb + Aaze vs AMb + FCZ was 0.26 (95%CrI 0.04-1.26) with a conventional MTC, and 0.24 (0.04-0.98) with informative priors. Use of informative priors reduced the DIC by 38% and the heterogeneity by 28%, indicating a better model fit. Moreover, evidence from the non-comparative studies was coherent with the randomized evidence, adding to the validity of the approach. CONCLUSIONS: Incorporating non-comparative studies as informative priors in Bayesian MTCs appears a viable approach for reducing the uncertainty in MTCs, and thus easing decision making.

PM14 MODIFICATION OF THE SCHIZOPHRENIA CAREGIVER QUESTIONNAIRE: MODIFICATION OF THE ZARIT BURDEN INTERVIEW INFORMED BY QUALITATIVE INSIGHTS

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OBJECTIVES: While different versions of the Zarit Burden Interview (ZBI) are widely used to assess the impact of caring for a person with schizophrenia on caregivers’ lives and emotional and physical well-being is of increasing interest. Understanding the impact of caring for a person with schizophrenia

PM15 USING AN EXCEL CALCULATOR TO ESTIMATE ANKYLosing SPONDYLITIS COSTS IN TURKEY

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OBJECTIVES: Clinical oncology research projects require participation of oncologists and/or hematologists to recruit patients and/or assess clinical outcomes. A variety of methods is used to recruit office or hospital based physicians. Specifically for studies with an epidemiological aspect, the study should not rely on the typical clinical expert sites, thus, alternative recruitment pathways are increasingly considered. The objective of our study was thus to assess the benefits of using physician panels for site recruitment. METHODS: In 2012, a representative survey among members of a managed physician panel (All Global’s managed panel of oncologists and hematologists in US, UK, GER, FR, IT and SP) was conducted. A sample of oncologists and hematologists was selected. The panel was stratified by race/ethnicity, gender and within the study. Oncologists and hematologists in the sample (25.7%) reported about their former experience with clinical trials and post-approval studies, their willingness to participate in future studies and their recommendations. RESULTS: A total of 284 (84.7%) of the physicians have formerly participated in clinical trials and 276 (67.2%) in post-approval studies. A total of 88.9% of the experienced oncologists and hematologists were willing to participate in future studies. More than 80% of the physicians of the principal investigator committee, to report serious adverse events to the sponsor of the study and to ask patients for written informed consent. No substantial difference between countries was detected. CONCLUSIONS: Since no special incentive was offered for participation the response rate was satisfactory Managed oncologist panels are a cost-effective,