COST-UTILITY OF LURASIDONE VERSUS STANDARD OF CARE (SOC) IN PATIENTS WITH SCHIZOPHRENIA IN ITALY

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BACKGROUND

The term schizophrenia derives from the Greek 'schizo' (splitting) and 'phren' (mind) with the term first coined by Eugen Bleuler in 1908. Schizophrenia is a complex, chronic mental health disorder characterized by an array of symptoms, including delusions, hallucinations, disorganized speech or behavior, and impaired cognitive ability. The early onset of the disease, along with its chronic course, make it a disabling disorder for many patients and their families [1]. Despite a low prevalence, schizophrenia's global burden of disease is immense. Over half of the patients have significant co-morbidities, both psychiatric and medical, making it one of the leading causes of disability worldwide [2]. The diagnosis correlates with a 20% reduction in life expectancy, with up to 40% of deaths attributed to suicide [3]. Current treatment consists largely in the administration of antipsychotic drugs combined with psychological therapies, social support and rehabilitation. Similar to other atypical antipsychotics it has a distinctive pharmacodynamic profile.

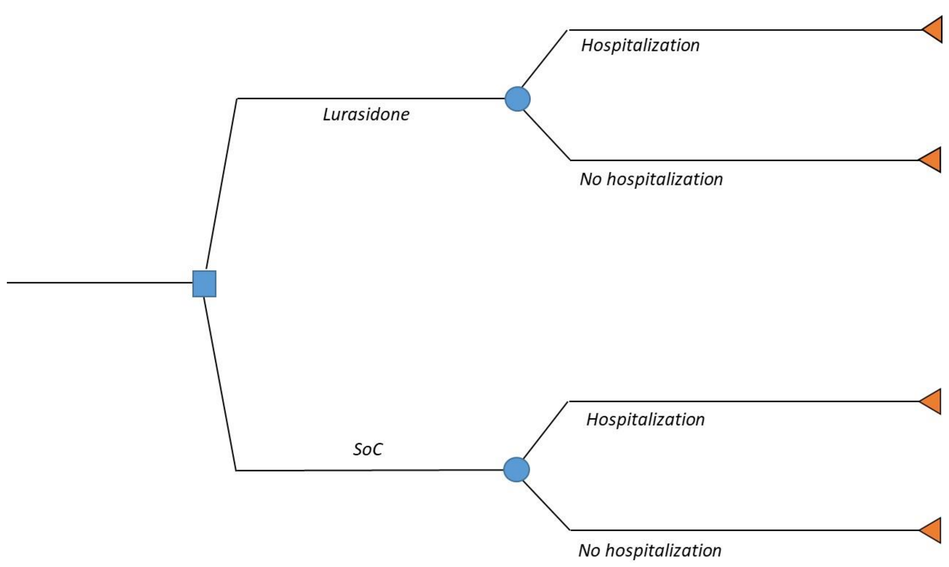
OBJECTIVES

The aim of this study was to conduct a cost-utility analysis to compare Lurasidone with second generation antipsychotics currently used in Italy for the treatment of adult patients with schizophrenia. Lurasidone is a new second-generation (atypical) antipsychotic approved for the treatment of schizophrenia in adults.

METHODS

In order to estimate the costs and health outcomes obtained from the two treatments in analysis, a probabilistic decision tree model was developed for to simulate, considering a time horizon of one year, the therapeutic course of two homogeneous cohorts of 100 patients (Figure 1). The treatments considered as an alternative therapeutic option to lurasidone (Standard of Care – SoC) were: Aripiprazole, Clozapine, Olanzapine, Quetiapine, Risperidone, Haloperidol, Paliperidone, Cariprazine, and finally the "Others" option consisting of Clopromazine, Amisulpride and Ziprasidone. A patient treated with lurasidone or SoC can be hospitalized due to relapse or not.

Figure 1: Decision tree



The annual probability of hospitalization due to relapse for each treatment was obtained from the literature; in particular, the "pooled" annual probability of hospitalization for SoC was calculated as a weighted average of the annual probabilities of each treatment for the respective market shares (Table 1). The utilities associated with each health state were obtained from the literature (Table 2). Consistent with the analysis perspective, drug cost and hospitalization cost were considered.

Drug cost for each treatment was estimated based on the prices of the DPC (Italian distribuzione per conto) of the Lazio Region (Italian Region) and based on the dosages indicated in the summary of product characteristics. The lurasidone price corresponds to the price published in the Official Journal. The annual drug cost was calculated considering an adherence of 90% for each treatment. The cost attributed to hospitalization was € 1.409 and has been estimated through the national tariffs associated with DRGs (DRG 432). All cost parameters are shown in table 1.

In order to identify the variability of the parameters considered in the model, a probabilistic sensitivity analysis (PSA) was conducted. An ICER value below € 35,000 per QALY earned was taken as a cost-effectiveness threshold value.

Table 1: Efficacy, market share and cost parameters

Treatment	Annual probability of hospitalization	References	Market share	Annual cost	References
Lurasidone	5,7%	[6,7]	4,3%	€ 516,10	[5]
Aripripazol	14,4%	[7,8]	25,8%	€ 154,50	DPC Lazio region
Clozapine	5,2%	[9]	13,4%	€ 950,67	
Olanzapine	7,8%	[7]	13,3%	€ 13,81	
Quetiapine	14,0%	[7]	11,2%	€ 54,57	
Risperidone	10,5%	[7]	10,1%	€ 11,18	
Haloperidol	9,6%	Hypothesized	7,4%	€ 24,16	
Paliperidone	9,6%	Hypothesized	6,9%	€ 900,71	
Cariprazine	9,6%	Hypothesized	2,1%	€ 223,86	
Others	9,6%	Hypothesized	5,5%	€ 286,32	
Standard of Care	10,6%	Weighted average	-	€ 516,10	Weighted average

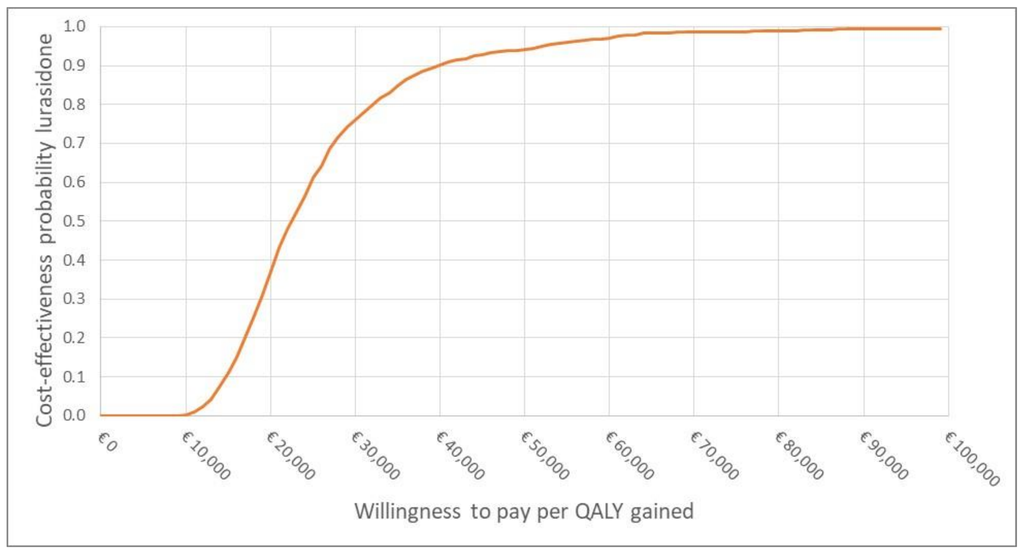
Table 2: Utilities

Utility	Note	References
0,604	Relapse with hospitalization	[10]
0,762	Relapse without hospitalization	

RESULTS

Considering a cohort of 100 patients, the model estimated a total annual cost equal to € 42,231 for patients treated with SoC and a total annual cost equal to € 59,641 for patients treated with Lurasidone. Lurasidone was found to be the most expensive alternative (with an incremental cost of € 17,410) but also more effective (0.78 QALYs incremental compared to the standard of care). The incremental cost-effectiveness ratio was estimated equal to € 22,316 per QALY gained from the payer perspective. The cost-effectiveness acceptability curve (Figure 2) showed that with a willingness to pay per QALY gained of € 30,000, the cost-effectiveness probability of Lurasidone is approximately 76%.

Figure 2: cost effectiveness acceptability curve (CEAC)



CONCLUSION

Schizophrenia is serious psychiatric disorder Schizophrenia that imposes a great burden on both economics and quality of life. While there is no cure for schizophrenia, treatment can help to lessen symptoms. Our analysis show that lurasidone may be a cost-effective treatment option from the NHS perspective when compared with the SoC currently used for the treatment of adult patients with schizophrenia in Italy.

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