The Impact of Innovative Treatments on the Economic Burden of Hepatocellular Carcinoma at Low Middle Income Countries

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Background:

Prevalence of (HCV) which represent From 5 to 7% of total population in low middle income countries like Egypt.

Hepatocellular carcinoma is one of major complications of HCV infection

At Africa for example Egypt is accounting for approximately half of the data related to HCC .Over the last two decades, a substantial increase (from 4.0% to 7.2%) with HCC in the proportion of chronic liver disease Egyptian patients was observed.

This percentage raise some questions like
How government afford innovative products for high number of patients?
Are these innovative products worthy for reimbursement?
What are the impact on budget?

The previous questions are the daily challenges for different health systems and that challenge increased with those systems facing budget constrains due to several elements like.

Inefficient health policies.

High number of patients.

Absence of effective drug polices like (affordability projects, patient access programs, second brand products, local agreements for technology transfer of new innovative medicines.

Absences of efficient reimbursement polices

The main objective behind conducting this study was to conduct an economic evaluation of Sorafenib as a pioneer molecule of innovative medicines for the treatment of hepatocellular carcinoma at law and middle income countries taking Egypt as a first country in those serious of evaluations due to representing sample of Egypt at (HCV.HBV, HCC) incidence and prevalence plus nature of it is experience compared to other countries over a time horizon of 4 years.

For maximizing health gain of the patients while ensuring the most efficient utilization of the finite resources available to the Egyptian Ministry of Health

Methods

A cost-effectiveness analysis from the payer perspective using Markov chain simulation model which is hypothetical cohort model to conforms to real practice of management of advanced HCC in Egypt. Model designed was designed based on real practice plus standard treatment guidelines

Four years' time horizon was selected to reflect the consequences of a decision. Transition probabilities from "first line until progression" state to "best supportive care" and "death" were derived from previously published studies; the SHARP study.

Health outcomes

The outcome of the two treatment arms was measured by quality-adjusted life years (QALYs).

Quality of life data were incorporated in the model to make adjusted results. Quality of life was calculated using utility score was derived from DA Cameron (2008).

Study Costs used were the local ones according to the national fund list. Discounting was applied at 3.5% annually. The results which are achieved were in term of ICER and number of QALYs.

Uncertainty Analyses:

To test results stability to changes in the estimates of the input model parameters, performed different 1D sensitivity analyses

Results

After three years, Total costs, QALY and ICER are shown in the following table.

Table 1: Decision Analysis Model Results:

During the four-year time horizon, Sorafenib is cost-effective at a willing to pay (WTP) threshold of 3 GDP per capita. Selection of (WTP) by 3 GDP per capita is based on the innovative nature of treatment plus World Health Organization Recommendations.

Discussion

One of the challenges facing Different Health systems at law and middle income countries suffering from budget constraints and secrecy of resources with high incidence and prevalence of Hepatitis dismisses complications and presence of new innovative medicines is how to reimburse and introduce those innovative medicines with accepted impact on budget. And how can those treatments reduce the burden of these dismisses

The study showing that innovative medicines for treatment Hepatocellular Carcinoma might reduce the economic burden of Hepatocellular Carcinoma. For achieving the previous objectives the following recommendations should be developed.

Developing efficient screeni

ng policies and programs for (HCV, HBV, and HCC).

Developing treatment guidelines those guidelines must take into consideration tow prospective clinical prospective and technology assessment prospective.

Conclusions

The results conclude that Sorafenib is cost-effective which lead to maximizing the health gain obtained from using Sorafenib strategy with minimal impact on resources. And to achieve that conclusion selecting the right patient with right clinical criteria plus developing affordability plans or patient accesses programs are corner stones for that conclusion as accesses programs and affordability projects can lead health care policy makers to subsidize resources to treat more patients. Effective clinical criteria might lead to enhance effectiveness for treatment.

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