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Clinico-economic analysis of PD-1 inhibitor and iBRAF+iMEK combination for treating Metastatic Melanoma with BRAF V600 mutation

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Skin melanoma is an important, severe condition and one of the most aggressive oncological diseases, characterized by high lethality. Relatively high costs of novel innovative treatments for this condition necessitate analysis of clinico-economical properties of such treatments in Russian healthcare setting. The pharmacoeconomic analysis included cost-effectiveness analysis and budget impact analysis performed using a model constructed based on a network meta-analysis of first-line treatments of melanoma with BRAF mutation including target therapy and immunotherapy. The alternatives compared were PD-1 inhibitor pembrolizumab compared to nivolumab and BRAF inhibitor combined with MEK inhibitor. Model assessed total survival, average progression-free survival and direct costs. Obtained results indicate that year of pembrolizumab treatment was 29% less expensive than dabrafenib+trametinib combination,

and 60% less expensive than vemurafenib+cobimetinib, while also 1,7% less expensive than nivolumab treatment. Cost-effectiveness ratio for pembrolizumab was the lowest of all alternatives compared, indicating highest cost-effectiveness. Budget impact analysis has shown that expansion of pembrolizumab use to 50% (at the expense of other alternatives) would result in budgetary savings totalling 1 507,5 million rubles accounted for Russian patient population size.

Use of pembrolizumab as first-line treatment in patients with BRAF V600 positive melanoma is thus associated with highest cost-effectiveness and budgetary savings and is pharmacoeconomically expedient.

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