Savings potential for fasciotens®Hernia and case estimation Czech Republic

1. **OP duration and OP costs per minute**

The cost of an operating theatre minute is fundamentally difficult to calculate, as there are various influencing factors (material, personnel costs, type of procedure). In Czech Republic, there are no relevant data available. A recent literature search from the USA on a total of 51 studies revealed an average cost of $46.04 per operating theatre minute 1. This corresponds to approx. **1,077 CZK/OR minute** at the exchange rate at the time (1 USD = 23,4 CZK on average in 2022). Naturally, healthcare systems can only be compared to a limited extent. However, if we look at expenditure on the healthcare system measured as a proportion of gross domestic product (GDP), Czech Republic spends 9,5 % of its GDP on health care compared to 16.6% in the US, which makes it still comparable 2.

Fasciotens®Hernia for the intraoperative treatment of large abdominal wall defects (defect width > 10 cm or loss of domain hernia) is an innovative surgical procedure and is used for complex abdominal wall reconstruction due to hernias 3,4. Procedures that lead to comparable results are based on weakening the lateral abdominal wall by severing one or more oblique abdominal muscles, called component separation. In addition to the anterior component separation (known as Ramirez), the most widely used procedure today is the transversus abdominis muscle release (TAR) 5,6. The first author of TAR and recognized hernia expert, Yuri Novitsky, published data from his centre in 2016 on his first 428 patients (period 2006 - 2014). This resulted in an average operating time of 251 minutes 7. The data from a retrospective analysis of the 143 first cases (period 2019 - 2023) operated on by Prof. Henning Niebuhr with fasciotens®Hernia showed an average operating time of approx. 184 minutes 8. This results in an average reduction in operating time of **67 minutes per case**.

In the following, both procedures are compared for the operating theatre costs of 1,077 CZK per OR minute.

1,077 CZK/OR minute

TAR: 251 minutes x 1,077 CZK/OR minute = 270,327 CZK per surgery

Fasciotens®Hernia 184 minutes x 1,077 CZK/OR minute = 198,168 CZK per surgery

Savings potential through the use of fasciotens®Hernia = 72.159 CZK per surgery

Of course, the product costs of fasciotens®Hernia are not included in the above calculations. The costs per device (disposable product) amount to 60,000 CZK (w/o VAT). If these costs are deducted from the above-mentioned differential amounts, this results in a positive amount of **12.159 CZK** for the calculation of 1,077 CZK per OR minute.

1. **Case estimation CZ**

According to the Federal Statistical Office of Germany 46,060 incisional hernia repairs have been performed in 2023 in Germany 9. The Danish national database covers almost all cases of hernia repair annually performed in Denmark. In the registry 18.3 % of all open incisional hernia cases were W3 hernias (hernia width above 10 cm) 10. Those patients are generally eligible for fasciotens®Hernia. Using the numbers above, approx. 8429 W3 incisional hernia repairs have been performed in 2023 in Germany. Having a population of 84.5 Million inhabitants it leads to approx. 100 cases per million per year. The Czech Republic has approx. 10.5 Million inhabitants. That leads to approx. 1050 cases per year in the Czech Republic.

1. **Sources**

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