**Sentinel node biopsy for prostate cancer: report from a consensus panel meeting**

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**Abstract**

**Objective:**

To explore the evidence and knowledge gaps in sentinel node biopsy (SNB) in prostate cancer by a consensus panel of experts.

**Methods:**

A two-round Delphi survey among experts was followed by a consensus panel meeting of 16 experts in February 2016. Agreement voting was performed using the RAND/University of California, Los Angeles Appropriateness Methodology on 150 statements in 9 domains. The disagreement index based on the interpercentile range-adjusted for symmetry score was used to assess consensus and non-consensus among panel members

**Results:**

Consensus was obtained on 91 of 150 (61%) statements.Main outcomes were: 1. The results from an extended lymph node dissection (eLND) are still considered the gold standard and SN detection should be combined with eLND at least in intermediate and high risk prostate cancer patients; 2. The role of SN detection in low risk prostate cancer is unclear; 3. Future studies should contain oncological endpoints as number of positive nodes outside the eLND template, false negative and false positive SN procedures, and recurrence-free survival. A high rate of consensus was obtained regarding outcome measures of future clinical trials on SNB (89%). Consensus on tracer technology was only obtained in 47% of statements reflecting a need for further research and standardization in this area.

The low level evidence in the available literature and the composition of mainly SN users in the panel constitute the major limitations of the study.

**Conclusions:**

Consensus on a majority of elementary statements on SN detection in prostate cancer was obtained. Therefore the results from this consensus report will provide a basis for the design of further studies in the field.

**Patient summary:**

A group of experts identified evidence and knowledge gaps on SN detection in prostate cancer and its application in daily practice. Information from the consensus statements can be used to direct further studies.

**1. Introduction**

Nodal metastases occur in 3-42% of men with clinically localized prostate cancer and presence of nodal metastases has a strong negative impact on survival (1, 2). Nodal dissection is considered as the optimal staging tool. The therapeutic value of nodal dissection is not proven and more extensive nodal dissection is associated with increased morbidity (3). The sentinel node biopsy (SNB) uses the lymphatic drainage of intra- or peritumoral injected tracers to identify those lymph nodes most likely to contain metastases. After injection the tracer, often radioactively labeled can be visualized by scintigraphy and single photon emission tomography (SPECT). Preoperative imaging and intraoperative detection can subsequently be used to resect SN. In breast cancer the SNB was shown to provide similar staging accuracy compared to nodal dissection while reducing morbidity (4). SN detection improved survival when compared with conservative management in patients with melanoma (5).

Since 1999, over 7000 prostate cancer cases treated with SN detection have been reported in the literature (6-8). However, the role of SN detection in prostate cancer is considered experimental and no level-1 evidence regarding its clinical value is available. This is likely to be due to the considerable heterogeneity and inconsistency of definitions, thresholds, types of tracer, descriptions of interventions and approaches, detection methods, and outcome selection, measurement and reporting in the literature (7, 8).

The objective of the present study was to develop and issue consensus statements to standardize the most important elements of the SN biopsy (SNB), including patient selection, definition of the SN, descriptions of technique and approaches, tracer type and detection, and outcome measurement and reporting, in order to provide guidance for clinicians and researchers.

**2. Methods**

**2.1 Consensus process**

The consensus building process was divided into two phases: (1) 2-round Delphi survey involving an international panel of healthcare professionals and researchers involved in the field of SNB for prostate cancer; and (2) consensus group meeting involving a panel of experts and researchers. Thus we follow early tested and reported protocols for consensus finding (9-12).

**2.1.1 Delphi survey**

A systematic review of the literature was performed in order to define and characterize the heterogeneity and inconsistency of all domains relating to SNB as reported in the literature. The objectives, methods and findings of the review are reported elsewhere (7, 8). Based on the review of the literature differences among studies rendered comparison of data difficult. To obtain consensus on all the aspects of SN detection with divided the areas where heterogeneity was observed in 9 different domains. The domains were organized as follows: (1) definition of sentinel nodes; (2) patient selection; (3) prophylactic antibiotic use; (4) technique or approach of performing SNB; (5) type of tracer and detection modalities; (6) histological assessment of SN; (7) reporting of SNB findings; (8) diagnostic accuracy outcome measures; and (9) clinical effectiveness outcome measures, including complications and oncological outcomes (**Table 2**). The review findings were summarized as a long list of domain-specific items or statements which were collated into an online questionnaire (13). The survey was prepared and cross-checked for consistency with the review findings by at least two individuals independently (HvdP, EW, TL and SM). An international panel of healthcare professionals and researchers including urologists, nuclear medicine specialists, trialists and methodologists involved in the field of SNB for prostate cancer were purposively sampled and invited by email to participate in the survey. Participants were identified through their authorship of studies on SNP and through the membership directory of the European Association of Urology; 50 participants were invited of which 43 completed the first survey round and 30 the second round. Two iterative rounds were conducted, and after each round participants were provided with anonymised feedback regarding the mean ranking score for the whole group for each item. Participants had the opportunity to add further items onto the survey in round 1 for incorporation into the following round. Voting was conducted online anonymously. Consensus was defined as agreement by ≥70% of participants in the final round. After the final round, items reaching consensus were collated for review at the subsequent consensus group meeting, and items which had not reached consensus were brought forward for discussion and voting at the meeting.

**2.1.2 Consensus group meeting**

A two-day consensus group meeting was held to review items which had reached consensus, and to discuss and vote on items which had not reached consensus. Participants were urologists, nuclear medicine specialists, methodologists, trialists and a patient representative, and were invited by email and had participated in the Delphi survey rounds. The meeting was also attended by non-voting participants, consisting of urologists or methodologists with an interest in the field of SNB, and representatives of the sponsors. It was chaired by a non-voting member, Dr. Steven MacLennan, Research Fellow, Academic Urology Unit, University of Aberdeen, Scotland. The survey was conducted as a series of statements, and participants were asked to vote based on their level of agreement, on a 9-point scale, ranging from strongly disagree (1) to strongly agree (9) (i.e. 1-3 Disagree; 4-6 Uncertain; 7-9 Agree). Voting was undertaken anonymously online via Survey Monkey, which participants could only access during the meeting using their own personal computers based on a shared IP address. Consensus was achieved when the two following criteria were fulfilled: (1) Median score of 7-9 (consensus agree) or 1-3 (consensus disagree); AND (2) No disagreement regarding the scoring. Disagreement was measured using the RAND/UCLA Appropriateness Method (14): when the Interpercentile Range (IPR; difference between the 30th and 70th percentiles) is larger than the Interpercentile Range Adjusted for Symmetry (IPRAS), which was calculated using the following formula: IPRAS = 2.35 + (Asymmetry Index [AI] × 1.5), where the AI is the absolute difference between 5 and the central point of the IPR. As such, the Disagreement Index (DI) was measured using the following formula: DI = IPR/PIRAS; if DI<1.0, then there was no extreme variation regarding the scoring (i.e. consensus agree or consensus disagree).

**3. Results**

**3.1 Delphi survey**

The systematic review confirmed significant heterogeneity and inconsistency in all nine domains relating to SNB and will be published separately (7). From the review, 167 items across all domains were prioritized and incorporated into Survey Monkey as 42 questions (**Table S1**). A total of 30 participants (70%) completed all 2 rounds of the survey. Forty additional items were proposed by participants in round 1, and these were incorporated into round 2.

**3.2 Consensus group meeting**

The consensus group meeting was held at the Karl Storz Training Centre, Berlin, Germany on the 25th and 26th February 2016. A total of 23 participants attended, in which 16 were voting members. The list of participants and voting status are summarized in **Table 1**. Following discussion on the survey results, a few items were re-phrased to achieve greater clarity and reduce ambiguity immediately prior to voting.

**3.3 Final consensus statements**

The items reaching consensus are summarized in **Table 3** organized by domains. The final consensus statements from the study and the results of the voting for each item are summarized in **Table S1.**

**4. Discussion**

**4.1 Principal findings**

The main purpose of the project was to establish consensus statements for SNB in prostate cancer in order to standardize all elements associated with the procedure and hence provide guidance for clinical practice and researchers. A prior systematic review confirmed significant heterogeneity and inconsistency in undertaking SNB, and identified items requiring consensus (7, 8). Through 2-round Delphi survey followed by a consensus group meeting, consensus was achieved on 35 items, which were then incorporated into consensus statements covering all nine domains.

**4.1.1 Definition of sentinel node**

Various definitions of SN were identified from the review of the literature (7). During the consensus group meeting, voting on 11 definitions was performed (**Table S1**). Consensus ‘agreement’ was obtained on 6 of these definitions, with the strongest agreement reached for “All nodes that appear first in each drainage basin as seen on early (15 min) lymphoscintigrams and/or SPECT-CT imaging in new basins that were not yet seen on the early images" (**Figure 1**). There was 1 consensus ‘disagreement’ for the definitions, for “All fluorescent nodes”. This implies that the panel mainly agrees on the specificity of SN detection. The SNB can be used to identify those nodes that most likely, but not necessarily exclusively, contain nodal metastases.

**4.1.2 Patient selection**

Consensus ‘agreement’ on 13 of 35 statements on patient selection was obtained, whereas consensus ‘disagreement’ was found for 8 statements (**Table S1**). Unanimous agreement (i.e. median score of 9 and Disagreement index =0) was obtained on 2 statements: “In terms of suitability for a sentinel node procedure, the intermediate risk group is suitable” and “In terms of suitability for a sentinel node procedure, high risk groups are suitable, but require additional extended lymphadenectomy”. The panel also achieved consensus regarding the fact that age, BMI, prostate size, tumor location and size, previous TURP or prostatitis were not important criteria in selecting patients for SNB. No consensus was reached on SNB in low risk cancer and BPH as exclusion criteria.

**4.1.3 Sentinel node tracer and detection**

Consensus ‘agreement’ was obtained on 15 of 55 statements related to tracers, and consensus ‘disagreement’ on 12 (**Table S1**). The panel members agreed on the use of the following tracers for SNB: “99mTc-nanocolloid”, “hybrid (99mTc / ICG) tracer”, and “ICG”. Agreement was obtained on the fact that “1-2cc of tracer volume was deemed most suitable in 4 injections preferably in the peripheral zone of the prostate”. The panel agreed on the statement that “the optimal timing of post-tracer-injection imaging is dependent on the chosen tracer”. The panel also agreed on the fact that “intraoperative ICG imaging may replace 99mTc-gamma probe detection during surgery”.

The optimal time interval between tracer injection and surgery was “4-8 hours” for 99mTc-based tracers, “less than 30 minutes” for free-ICG as tracer, and “2-4 hours” for the bound-ICG tracer. Consensus ‘disagreement’ was obtained for intervals “longer than 2 hours” for free-ICG, and an interval “shorter than 30 minutes” for bound ICG.

The panel disagreed with the use of “low (<1cc)” and “high (>2cc)” tracer volume injections, and “2 injections”. Also the panel disagreed with the use of “very small particle size (<80nm)”.

Interestingly, no consensus could be obtained on the use of tracers such as albumin, tilmanocept, super paramagnetic ironoxide, or sulfur containing tracers and on the “optimal radioactive dose for the tracer (mBq)”.

Regarding the optimal route of tracer administration, consensus was reached in the Delphi survey: “transrectal” route (86% of participants) and under “transrectal ultrasound guidance” (86% of participants).

**4.1.4 Interventions**

Consensus ‘agreement’ was obtained on 10 of 22 statements on surgical intervention. The panel agreed that both “gamma probe detection” and “near infra-red imaging” were useful for intraoperative SN imaging. There was agreement that the optimal number of SN was 2-5 but was also patient dependent. The panel agreed that the optimal number of lymph nodes that should be removed with a nodal dissection for prostate cancer, balancing toxicity and oncological accuracy, is 16-20. There was also agreement that in those cases where no SN was visualized, an eLND was indicated.

**4.1.5 Histological assessment**

The panel achieved consensus ‘agreement’ on the optimal histological processing of the sentinel nodes, which was “formalin-fixed paraffin-embedded with 400um sections”, and that immunostaining should be applied to exclude micrometastases (**Table S1**).

**4.1.6 Reporting of SNB findings**

In the Delphi survey, consensus ‘agreement’ was reached on “anatomical location as the preferred reporting modality of SN location” (76% of respondents) (**Table S1**).

**4.1.7 Antibiotic prophylaxis**

Three statements on antibiotic prophylaxis for SNB were voted on by the consensus panel (**Table S1**). A single antibiotic dose was agreed upon as the optimal antibiotic prophylaxis for the procedure.

**4.1.8 Diagnostic accuracy outcome measures**

The panel reached consensus ‘agreement’ regarding the calculation of diagnostic test accuracy, in that all SNB studies should report on the following elements: sensitivity, specificity, negative predictive value, positive predictive value, false negative rate, and false positive rate. The consensus definition for false positives is “patients with positive SN outside the eLND template with a negative eLND”, and for false negatives it is “patients with nodal metastases in eLND but negative SN”. There was also consensus ‘agreement’ that sensitivity of SN detection is the most important diagnostic test accuracy element.

Whilst the false positive definition is counter-intuitive, it is imperative to adhere to standardized criteria in calculating diagnostic accuracy, which must be based on the reference standard (i.e. eLND). This reflects the imperfect use of eLND as a reference standard.

**4.1.9 Clinical effectiveness outcome measures**

There was consensus ‘agreement’ that the following outcome measures should be reported in any SNB study: number of positive nodes, number of SN outside eLND template, and number of patients with metastases to SN only (**Table S1**). There was also consensus ‘agreement’ that an acceptable outcome for SNB was “similar oncological outcome but reduced toxicity compared to eLND”.

Regarding non-oncological outcome measures, there was consensus ‘agreement’ that the following measures were important: complication rate, operating time and transfusion rate. For complications, the panel reached consensus ‘agreement’ regarding the aim that “Clavien-Dindo (15) grade 1-2 complications should occur in less than 10% of cases”, and that “grade 3-5 complication should occur in 0-2% of cases”. The majority of respondents (86%) stated that adding SN detection to lymph node dissection in prostate cancer does not increase the risk of complications (**Table S1**).

**4.2 Implications of study findings on clinical practice and research**

For researchers and trialists, the consensus statements provide guidance in terms of trial design, patient selection, interventions, and outcome measurement and reporting. By reducing heterogeneity and inconsistency across all the elements of SNB, the results of future studies can be compared more meaningfully. Future work should focus on prospectively assessing the diagnostic test accuracy of SNB based on eLND as the reference standard as well as oncological outcome. Given these uncertainties in the meantime, SNB should be considered experimental.

**4.3 Strengths and limitations**

The strengths of the project include the robust, transparent, standardized and reproducible methods used to achieve consensus. The study involved an international, large, purposively-sampled and diverse group of participants involved with SNB.

In terms of limitations, the majority of panel members had personal experience with SN detection what may have introduced a bias. We anticipated that the panel composition would be helpful to assess criteria for future study design. Another potential limitation is the relatively high attrition rate in the Delphi survey (30.2%). To compensate for this, all items listed in the survey were reviewed at the consensus meeting. We adopted the RAND/UCLA method for scoring the level of disagreement using the Disagreement Index (DI). A threshold DI value of 1 was arbitrarily selected (16) but other methods can be considered. Some have suggested that the RAND/UCLA method’s objective is not to reach consensus, but rather to evaluate where panel members agree (14). However, in our study since the voting by panel members was preceded by the review of the data from the Delphi survey followed by a discussion on all statements, we believe that the voting results do indeed reflect consensus opinions.

**5. Conclusions**

This report provides essential guidance for clinicians and researchers, and represents a major step forward in dealing with the issue of heterogeneity and inconsistency affecting the conduct and reporting of studies on SNB.

Consensus was obtained on the definition of SNB. The SNB can be used to identify those nodes that most likely, but not necessarily exclusively, contain nodal metastases. SNB is an option for both intermediate and high risk prostate cancer. The role of SNB in low risk disease remains controversial. The members agreed on the timing and number of injections. Several tracers were found useful but no comparative data exists to recommend one over the other. For comparison the reference standard of SNB is eLND. In cases where SNB can not be visualized a eLND is recommended.

Whilst SNB remains an attractive and promising staging intervention that may expand our options in managing men with localized prostate cancer, further work is required to determine its exact role and therapeutic value before it becomes established as a standard staging procedure.

**Acknowledgements:**

We thank all contibutors to the Delphi Survey for their input as well as the companies Karl Storz Endoskope (Germany) and Intuitive Surgical (US) for making the consensus meeting possible.

**Legend to illustration**

**Figure 1.** Definitions of SNB of the prostate and rating by panel members.

**Table 1.** Consensus panel members at the Sentinel Node for Prostate Cancer consensus meeting (25-26 february 2016, Berlin Germany).

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| --- | --- | --- | --- | --- |
|  | **name** | **institute** | **discipline** | **sentinel node technique used** |
| 1 | Acar, Cenk | Ankara, Turkey | urology | ICG |
| 2 | Cogorno, Leopold Roberto | Spain | urology | ICG |
| 3 | Gomez-Ferrer, Alvaro | Spain | urology | ICG |
| 4 | Hruby, Stephan | Salzburg, Austria | urology | ICG |
| 5 | Janetschek, Gunther | Salzburg, Austria | urology | ICG |
| 6 | Joniau, Steven | Leuven University, Belgium | urology | Tc |
| 7 | Junemann, Klaus-Peter | Kiel University, Germany | urology | ICG |
| 8 | Lam, Thomas | Aberdeen University, Scotland | urology |  |
| 9 | Liedberg, Fredrik | Lund university, Sweden | urology | Tc, ICG |
| 10 | Maclennan, Steven | Aberdeen university, Scotland | methodology |  |
| 11 | Tielbeke, John | Deventer, the Netherlands | patient representative |  |
| 12 | Valdes Olmos, Renato | Leiden university medical center, the Netherlands | nuclear medicine | Tc |
| 13 | Van den Berg, Nynke | Leiden university medical center, the Netherlands | Interventional imaging | Tc, ICG |
| 14 | Van der Poel, Henk | Netherlands Cancer Institute, Amsterdam, the Netherlands | urology | Tc, ICG |
| 15 | Van Leeuwen, Fijs | Leiden university Medical center, the Netherlands | Interventional imaging | Tc, ICG |
| 16 | Wawroschek, Friedhelm | Oldenburg university, Germany | urology | Tc, SPION |
| 17 | Winter, Alexander | Oldenburg university, germany | urology | Tc, SPION |
| 18 | Wit, Esther | Netherlands Cancer Institute, Amsterdam, the Netherlands | urology | Tc, ICG |

*ICG=indocyanine green, SPION= super paramagnetic iron oxide nanoparticles, Tc=technetium-99m*

**Table 2. Domains of voting during the consensus panel meeting.**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Title** | **statements in survey** | **statements for consensus voting** | **consensus** | **% consensus** |
| 1 | SN definition | 14 | 10 | 6 | 60% |
| 2 | Patient selection | 48 | 35 | 21 | 60% |
| 3 | Prophylactic antibiotics | 4 | 3 | 2 | 66% |
| 4 | Tracer technology | 46 | 55 | 26 | 47% |
| 5 | Surgical intervention | 29 | 25 | 17 | 68% |
| 6 | Histology | 2 | - | - | - |
| 7 | Reporting | 1 | - | - | - |
| 8 | Diagnostic accuracy | 4 | 4 | 3 | 75% |
| 9 | Outcome | 19 | 18 | 16 | 89% |
|  |  | **167** | **150** | **91** | **61%** |

*SN=sentinel node*

**Table 3.** Statements consensus was obtained among experts. For each statement disagreement or agreement is reported.

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| **1. Definitions of sentinel node** |  |
| The most appropriate definition of a sentinel node from the prostate is "All nodes that appear first in each drainage basin as seen on early (15 min) lymphoscintigrams and/or late lymphoscintigrams (and/or SPECT-CT imaging) in new basins that were not yet seen on the early images" | agreement |
|  |  |
| The most appropriate definition of a sentinel node from the prostate is "Hypothetical first lymph node or group of nodes draining a cancer" | agreement |
| The most appropriate definition of a sentinel node from the prostate is "Primary landing site(s)" | agreement |
| The most appropriate definition of a sentinel node from the prostate is "All nodes that appear first in each drainage basin as seen on early and/or late lymphoscintigrams including SPECT-CT" | agreement |
| The most appropriate definition of a sentinel node from the prostate is "A lymph node that receives direct drainage from the primary tumour, and each basin can have its own sentinel node" | agreement |
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| **2. Patient selection** |  |
| In terms of suitability for a sentinel node procedure, intermediate risk group is suitable | agreement |
| In terms of suitability for a sentinel node procedure, cT1-2 are suitable | agreement |
| In terms of suitability for a sentinel node procedure, cT3-4 are suitable | agreement |
| In terms of suitability for a sentinel node procedure, cN0 are suitable | agreement |
| In terms of suitability for a sentinel node procedure, cNx are suitable | agreement |
| In terms of suitability for a sentinel node procedure, an elevated (>5%) nomogram risk of pN1 are suitable | agreement |
| In terms of suitability for a sentinel node procedure, biopsy Gleason score = 7 are suitable | agreement |
| In terms of suitability for a sentinel node procedure, biopsy Gleason score >7 are suitable | agreement |
| In terms of suitability for a sentinel node procedure, high risk groups are suitable, but require additional extended lymphadenectomy | agreement |
| In terms of suitability for a sentinel node procedure, selected high risk patients are suitable | agreement |
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| Biopsy Gleason score is an important eligibility criterion for a sentinel node procedure | agreement |
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| cTNM stage is an important eligibility criterion for a sentinel node procedure | agreement |
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| Nomogram-estimated N1 risk is an important eligibility criterion for a sentinel node procedure | agreement |
| Previous TURP is an exclusion criterion for a sentinel node procedure | disagreement |
| Prostatitis is an exclusion criterion for a sentinel node procedure | disagreement |
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| **3. Antibiotic prophylaxis** |  |
| The optimal antibiotic prophylaxis for the sentinel node procedure is 1 dose of antibiotic prior to tracer injection | agreement |
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| **4. Tracer technology** |  |
| The most appropriate tracer to detect a sentinel node or lymph node landing site of the prostate is 99mTc-nanocolloid | agreement |
| The most appropriate tracer to detect a sentinel node or lymph node landing site of the prostate is Hybrid tracer (fluorescence and radioactive) | agreement |
| In terms of suitability for a sentinel node procedure, intermediate risk group is suitable | agreement |
| The most appropriate tracer to detect a sentinel node or lymph node landing site of the prostate is Fluorescent Indocyanine Green (ICG) | agreement |
| The most appropriate tracer to detect a sentinel node or lymph node landing site of the prostate is Preoperatively perform SN mapping using hybrid tracer and radioactive signature; then Intraoperatively use fluorescence signature hybrid tracer, and if unsure perform gamma tracing of the radioactive signature of the hybrid tracer | agreement |
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| The optimal total volume of the tracer is 1-2cc | agreement |
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| The optimal number of tracer injections in to the prostate is 4 | agreement |
| The optimal location of tracer injection is into the peripheral zone of the prostate | agreement |
| The optimal timing of post-injection imaging is 2 hours after injeciton | agreement |
| The optimal timing of post-injection imaging is dependent on the tracer and preoperative or intraoperative imaging | agreement |
| The optimal time of injection prior to surgery is ICG immediately prior to surgery | agreement |
| Intraoperative (fluorescence) imaging for sentinel node surgery is needed and improves resection. | agreement |
| Comparing open versus laparoscopic surgery, tracer use, injection and preoperative imaging can be similar | agreement |
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| The best time of injection of a technetium tracer is less than 4-8hrs prior to surgery. | agreement |
| The best time of injection of a free ICG tracer is less than 0.5hrs prior to surgery. | agreement |
|  |  |
| The best time of injection of a free ICG tracer is less than 2-4hrs prior to surgery. | disagreement |
| The best time of injection of a free ICG tracer is less than 4-8hrs prior to surgery. | disagreement |
| The best time of injection of a free ICG tracer is less than 8-12hrs prior to surgery. | disagreement |
| The best time of injection of a free ICG tracer is less than >12hrs prior to surgery. | disagreement |
| The best time of injection of a bound ICG tracer is less than 0.5hrs prior to surgery. | disagreement |
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| **5. Surgical intervention** |  |
| The best way to detect sentinel nodes intra-operatively is the NIR fluorescence imaging | agreement |
| The best way to detect sentinel nodes intra-operatively is the gamma probe or NIR imaging | agreement |
| The optimal gamma probe detection angle for intra-operative detection of sentinel nodes is 45 degrees | agreement |
| The optimal gamma probe detection angle for intra-operative detection of sentinel nodes is 90 degrees | agreement |
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| In terms of additional lymph node dissection, a sentinel node procedure for prostate cancer should be combined with an extended lymph node dissection in most situations but in selected cases lymph node dissection can be omitted | agreement |
| The optimal number of sentinel nodes that should be detected during a sentinel node procedure is 2-5 | agreement |
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| The optimal number of sentinel nodes that should be detected during a sentinel node procedure is 2-5 per hemi-pelvic side | agreement |
| The optimal number of sentinel nodes that should be detected during a sentinel node procedure is patient-dependent (usually >2) | agreement |
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| The optimal number of lymph nodes that should be removed with a nodal dissection for prostate cancer, balancing toxicity and oncological accuracy is 16-20 | agreement |
|  |  |
| The optimal number of lymph nodes that should be removed with a nodal dissection for prostate cancer, balancing toxicity and oncological accuracy is >25 | disagreement |
| Until not otherwise proven or other tumorspecific tracers are available-extended LND is needed in all patients | disagreement |
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| **6. Histology: no consensus voting needed** |  |
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| **7. Reporting: no consensus voting needed** |  |
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| **8. Diagnostic test accuracy** |  |
| In studies of diagnostic accuracy of the sentinel node procedure using extended lymph node dissection (eLND) as reference standard, the diagnostic test accuracy outcome should include number of positive nodes | agreement |
| In studies of diagnostic accuracy of the sentinel node procedure using extended lymph node dissection (eLND) as reference standard, the diagnostic test accuracy outcome should include number of nodes outside the extended nodal dissection template | agreement |
| In studies of diagnostic accuracy of the sentinel node procedure using extended lymph node dissection (eLND) as reference standard, the diagnostic test accuracy outcome should include % of men with metastases limited to sentinel nodes | agreement |
| In studies of diagnostic accuracy of the sentinel node procedure using extended lymph node dissection (eLND) as reference standard, the diagnostic test accuracy outcome should include sensitivity | agreement |
| In studies of diagnostic accuracy of the sentinel node procedure using extended lymph node dissection (eLND) as reference standard, the diagnostic test accuracy outcome should include specificity | agreement |
| In studies of diagnostic accuracy of the sentinel node procedure using extended lymph node dissection (eLND) as reference standard, the diagnostic test accuracy outcome should include positive predictive value | agreement |
| In studies of diagnostic accuracy of the sentinel node procedure using extended lymph node dissection (eLND) as reference standard, the diagnostic test accuracy outcome should include negative predictive value | agreement |
| In studies of diagnostic accuracy of the sentinel node procedure using extended lymph node dissection (eLND) as reference standard, the diagnostic test accuracy outcome should include false negative rate | agreement |
| In studies of diagnostic accuracy of the sentinel node procedure using extended lymph node dissection (eLND) as reference standard, the diagnostic test accuracy outcome should include false positive rate | agreement |
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| **9. Outcome** |  |
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| In studies of sentinel procedure for prostate cancer, urinary incontinence is an important non-oncological outcome to measure | disagreement |
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***Table S1.*** Consensus panel questions for definitions of sentinel node, patient selection, antibiotic prophylaxis, tracer techniques, intervention, diagnostic accuracy, and outcome.

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