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Management of Patients with Breast Biopsy under Anti-Coagulation or Anti-Platelet Therapy: Results of a Survey of German Experts

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Keywords
Breast · Biopsy · Anti-coagulation · Anti-platelet therapy · Expert survey

Abstract

Introduction: Pre-therapeutic histologic diagnosis through image-guided core needle biopsy (CNB) or vacuum-assisted biopsy (VAB) for suspicious breast findings is a standard procedure. Despite the moderate risk of bleeding, a significant proportion of patients are on temporary or permanent anti-coagulation therapy (ACT) or anti-platelet therapy (APT). Currently, there are no established guidelines for managing biopsies in such patients, leading to varying approaches in clinical practice. ***Methods:*** An online survey was conducted among all members of the breast ultrasound working group at the German Society for Ultrasound in Medicine (DEGUM) and the working group for breast diagnostics at the German Radiology Society (DRG). It included n = 51 questions about individual risk perception of biopsy-related bleeding complications and the specific management of biopsies on ACT/APT. ***Results:*** A total of 332 experts participated, with 51.8% reporting the absence of a standardized management plan for breast biopsies on ACT/APT. Concerning specific ACT/APT medications, the survey revealed discrepancies in risk perception and management: The majority preferred discontinuing medication with directly acting oral anti-coagulants (DOACs; CNB: 66.9%; VAB: 91.1%), phenprocoumon (CNB: 74.9%; VAB: 96.7%), or therapeutic heparin (CNB: 46.1%; VAB: 72.7%). However, there was a lower inclination to discontinue acetylsalicylic acid (ASA; CNB: 15.2%; VAB: 50.3%) or prophylactic heparin (CNB: 11.9%, VAB: 36.3%). ***Conclusion:*** Breast biopsies for patients on ASA or prophylactic heparin are deemed safe and part of standard clinical practice. However, despite available feasibility studies, conducting breast biopsies on ACT medications such as DOACs or phenprocoumon appears feasible only for a minority of experts.

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Introduction

Pre-therapeutic histologic diagnosis that is made via percutaneous core needle biopsy (CNB) or via vacuum-assisted biopsy (VAB) is the procedure of choice in cases of suspicious findings in the breast or axillary lymph nodes. These procedures are recommended by various guidelines, including the German S3 guideline for breast cancer [1] and the German Gynecological Oncology Working Group (AGO) recommendations [2]. The advantages of these procedures (in comparison with surgical biopsy) are well recognized and include faster recovery as well as reductions in costs, in the number of required follow-up surgeries, and in adverse events [3].

Biopsy needles typically range from 12 to 14 gauges in CNB and from 8 to 11 gauges in VAB. Common complications include bleeding and hematoma formation, both of which occur at rates of less than 1%. Clinically relevant complications are a rare event, even with the use of larger needles [4]. Therefore, biopsies of the breast tissue are normally regarded as low-risk interventions [5]. Despite the moderate risk of bleeding, it should be noted that in Germany alone, around 1 million patients are currently on temporary or permanent anti-coagulation (ACT) or anti-platelet (APT) therapy due to pre-existing medical conditions [6]. For these patients, a generally elevated risk of bleeding complications for all forms of invasive interventions must be assumed.

Depending on the indication, ACT and APT act primarily on the plasmatic coagulation system or by inhibiting platelet aggregation [7]. ACTs include above all vitamin K antagonists (VKA, e.g., phenprocoumon), heparins, and non-vitamin-K-dependent directly acting oral anti-coagulants (DOACs). ACTs are used mainly in cases of atrial fibrillation, after mechanical heart valve replacement, or for therapy and secondary prophylaxis of venous thromboembolism as well as in managing coagulation disorders [8, 9]. APTs, on the other hand, mainly comprise low-dose acetylsalicylic acid (ASA 100 mg) and P2Y12 inhibitors (e.g., clopidogrel, ticagrelor, prasugrel), which are indicated for atherosclerotic diseases and after vascular interventions. In the latter indication, APT is used as dual therapy (dual anti-platelet therapy, [DAPT]).

Based on the underlying disorders, patients on ACT/APT have an elevated basic risk of clinically relevant complications (including bleeding and hematoma formation) after any interventional or surgical procedures, especially during vascular interventions or biopsies of internal organs (liver, kidney). In contrast to these moderate- or high-risk procedures, biopsies of the breast or axilla are often regarded as interventions with a low risk of bleeding as they are easily detected and controllable, comparable to other superficial drainages or biopsies in other regions of the body (skin, paracentesis, etc.). However, highly evidence-based study results specifically on the peri-interventional management of breast biopsies in patients on ACT/APT are not available, and only a few guidelines specifically for breast biopsies have been published [10, 11]. Recommendations from interventional radiology societies provide an orientation, e.g., published by the Society of Interventional Radiology (SIR) [12] or regularly updated "practice parameters" by the American College of Radiology (ACR). Whereas the British Society of Breast Radiology Guidelines pursues a quite liberal strategy in the peri-interventional management [10], the recommendations from SIR and ACR generally follow a more conservative approach (with a low threshold of withholding certain medication) also in procedures defined with a low risk of bleeding [12]. Based on the limited available data, the lack of clear evidence, as well as the heterogenous and vague recommendations, it is often necessary to decide on a case-by-case basis whether to temporarily stop or continue ACT/APT. The central challenge in making this decision lies in striking a balance between the prominent risk faced by patients on ACT/APT. This involves carefully weighing the potential bleeding risk post-biopsy against the risk of triggering a thromboembolic event upon discontinuing the medication. In the latter scenario, additional decisions may be required, such as determining the appropriate timing for discontinuation before the planned biopsy and evaluating the necessity of adequate bridging therapy.

Most experiences in dealing with breast biopsies for patients on ACT/APT arise from everyday clinical practice. Only a few existing studies have supported the safety of breast biopsies in patients on ACT/APT. These studies have shown high variability in terms of their design (including follow-up), the studied medication regimens, and the biopsy methods used (including modality and gauges) [13]. However, data are limited, and variation in clinical practice persists.

In this context, expert knowledge and clinical expertise might be a relevant source for generating recommendations on breast biopsy procedures for patients on ACT/APT. Therefore, with the primary goal of obtaining insights into the routine management, a survey was conducted among experts. The aim was to extract practical recommendations for gynecologists and radiologists when dealing with these patients in everyday clinical practice.

Methods

Survey Design

The survey on this topic was constructed by an expert panel of the breast ultrasound working group at the German Society for Ultrasound in Medicine (DEGUM) and the

Table 1. Participant and institution characteristics

	n	%
Annual CNB caseload		
None	10	3.5
<150	83	29.1
150–250	72	25.3
251–350	35	12.3
351–450	23	8.1
>450	60	21.1
Unknown	2	0.7
Annual VAB caseload		
None	93	32.6
<150	104	36.5
150–250	57	20.0
251–350	15	5.3
351–450	5	1.8
>450	4	1.4
Unknown	7	2.5
Medical society membership		
DEGUM	290	90.6
DRG	82	25.6
Both	42	12.6
DEGUM qualification breast ultrasound		
DEGUM I	133	41.4
DEGUM II	102	31.8
DEGUM II Course Instructor ("Kursleiter")	11	3.4
DEGUM III	18	5.6
None	57	17.8

CNB, core needle biopsy; VAB, vacuum-assisted biopsy.

working group for breast diagnostics at the German Radiology Society (DRG). It was conducted digitally among all members of these organizations between September and November 2020. It included *n* = 51 questions. Closed questions (with several possible answers) comprised different aspects: first, general peri-interventional management (e.g., availability of written standards within the own facility; anamnesis with regard to bleeding risks, blood tests, etc.); second, specific management of patients under certain ACT/APT (according to ASA, DAPT, DOAC, phenprocoumon, and prophylactic/therapeutic heparin and divided up into CNB vs. VAB). Moreover, the survey included questions about the expert's individual risk perception of bleeding complications. The risk perception of clinically relevant bleeding complications was rated with a scale ranging from 1 ("low") to 100 ("high"), separately for CNB and VAB. Complications have been defined as events that temporarily diminish the patient's quality of life, either due to complex courses, additional necessary interventions, or the extension of further diagnostic procedures.

The original survey (in German language) can be found in the appendix (online suppl. material; for all online suppl. material, see https://doi.org/10.1159/000536079) to this manuscript. The survey invitation was sent via email with a one-time reminder. For participants with memberships in both the DEGUM and the DRG, survey participation was possible only once. Participation was anonymous and took about 15 min to complete. A written informed consent was obtained from participants to participate in the study survey.

Statistical Analysis

Discrete answers and characteristics were given in absolute and relative frequencies. Results of questions for risk perception were presented with mean values and 95% confidence intervals.

Results

Participants and Institutional Background

In total, *n* = 332 participants completed the survey, *n* = 178 of whom were female (55.5%) and *n* = 142 were male (44.2%). Most participants were gynecologists (71.7%), followed by radiologists (27.1%). Most participants were working either in a private practice (27.7%) or in a tertiary/university hospital (26.8%). Most participants were members of the DEGUM (90.6%), around one-quarter of the DRG (25.6%), and 16.2% of both societies. Table 1 presents information on the survey participants. Not all questions were answered by all participants as some questions were not relevant for certain members of the cohort (e.g., questions on VAB).

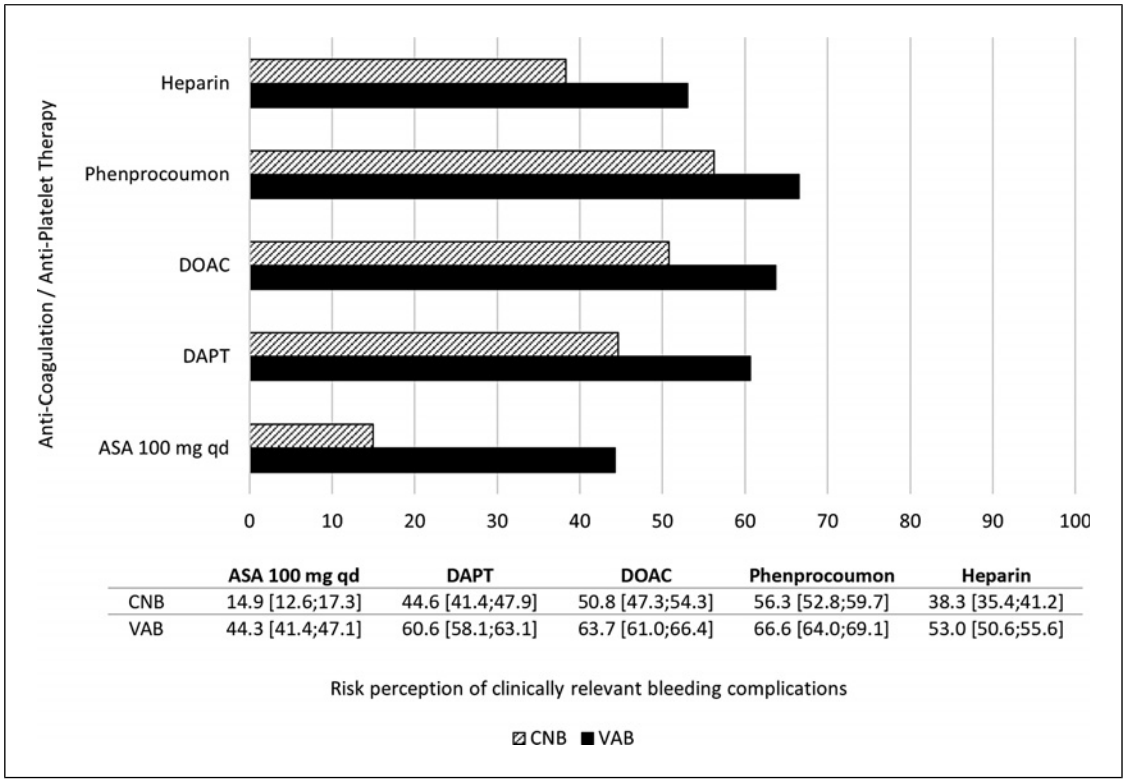
Concerning CNB, most participants worked in a clinical setting in which less than 150 biopsies were performed per year (<150/y: 29.1%); on the other hand, around 20% of participants were in a setting with more than 450 CNBs per year. Concerning VAB, around one-third of participants did not perform VAB in clinical routine (32.6%), while more than one-third performed less than 150/year (36.5%). For CNB, most participants used a needle size of 16 gauge (72.6%), whereas the needle size for VAB varied between 8 gauge (25.5%), 9 gauge (24.5%), and 10 gauge (24.5%). Table 1 presents detailed information on the institutional caseload.

Risk Perception of Biopsies in Patients on ACT or APT

The survey's overall findings indicated that performing VAB in patients on ACT/APT was perceived to pose a higher risk of bleeding complications compared to CNB in the same patients. Specifically, conducting biopsies in patients on DAPT, phenprocoumon, and DOACs was perceived to have a higher average risk compared to biopsies in patients on ASA (Fig. 1). Overall, most experts did not perceive a difference in the risk associated with biopsies in the axilla compared to those in the breast (yes: 42.1% vs. no: 57.9%).

Managing Biopsies in Patients on ACT or APT

More than half of participants (51.8%) indicated that they could not rely on specific standards for managing breast biopsies in patients on ACT/APT in their respective clinical setting. While anamnesis on ACT/APT medication was regularly performed (96.4%), laboratory examination of the coagulation status prior to the biopsy was not a standard procedure (9.7%). If indicated, CNBs were performed on the same day in most clinical settings



	ASA 100 mg qd	DAPT	DOAC	Phenprocoumon	Heparin
CNB	14.9 [12.6;17.3]	44.6 [41.4;47.9]	50.8 [47.3;54.3]	56.3 [52.8;59.7]	38.3 [35.4;41.2]
VAB	44.3 [41.4;47.1]	60.6 [58.1;63.1]	63.7 [61.0;66.4]	66.6 [64.0;69.1]	53.0 [50.6;55.6]

Fig. 1. Risk perception of clinically relevant bleeding complications after breast biopsy in patients on ACT/APT, separated for core needle biopsy (CNB) and vacuum-assisted biopsy (VAB). Scale ranges from 0 (low) to 100 (high). DOAC, directly acting oral anti-coagulants; DAPT, dual anti-platelet therapy; ASA, acetylsalicylic acid. Results were presented as mean values with 95% confidence interval.

(82.3%); for VABs, normally a new appointment was necessary (only 11.6% same-day biopsy). Table 2 presents more detailed information on managing breast biopsies in patients on ACT/APT.

Clear differences emerged in terms of managing breast biopsies in patients on ACT/APT with regard to the specific medication: The majority of experts performed CNB in patients on ASA (84.8%) or on prophylactic dose heparin (88.1%), whereas for VAB, no clear trend emerged among the experts (ASA: yes: 49.7% vs. no: 50.3%; prophylactic dose heparin: yes: 63.7% vs. no: 36.3%). Concerning medication with DOAC and phenprocoumon, only one-third (33.1%) and one-quarter (25.1%) of all experts, respectively, performed CNB, whereas for VAB, these rates were much lower (DOAC: 7.9%; phenprocoumon: 3.3%). On the question of clinical management, consulting a general practitioner or other clinical colleagues was the preferred procedure for a relevant share of all participants, for example, when making the decision to discontinue phenprocoumon (59.8%) or to bridge phenprocoumon with heparin (46.5%). Table 3 presents more detailed information on this topic.

Table 2. General management of breast biopsies in patients on ACT/APT

	n	%
Do you have standard operation procedures (SOPs) for managing breast biopsies in patients on ACT/APT?		
Yes	123	44.2
No	144	51.8
Unknown	11	4.0
Do you perform a specific anamnesis regarding ACT/APT?		
Yes	268	96.4
No	6	2.2
Unknown	4	1.4
Do you routinely request laboratory examination of the coagulation status prior to the biopsy?		
Yes	27	9.7
No	251	90.3
If indicated in clinical routine, do you perform CNB on the same day?		
Yes	223	82.3
No	48	17.7
If indicated in clinical routine, do you perform vacuum-assisted biopsy on the same day?		
Yes	21	11.6
No	160	88.4

Table 3. Specific management of breast biopsies in patients on ACT/APT

Therapy	Procedure	Management	*n*	%
ASA 100 mg qd				
How do you proceed with a patient on medication with ASA 100 mg qd?	CNB	Immediate biopsy	217	84.8
		No biopsy, discontinuation of ASA 100 mg for 5–7 days	39	15.2
	VAB	Immediate biopsy	74	49.7
		No biopsy, discontinuation of ASA 100 mg for 5–7 days	75	50.3
DAPT				
How do you proceed with a patient on medication with DAPT (i.e., ASA + clopidogrel/ticagrelor/prasugrel)?	CNB	Immediate biopsy	88	36.2
		No biopsy, discontinuation of ASA only	14	5.8
		No biopsy, discontinuation of DAPT only	95	39.1
		No biopsy, discontinuation of ASA + DAPT	46	18.9
	VAB	Immediate biopsy	14	10.5
		No biopsy, discontinuation of ASA only	6	4.5
		No biopsy, discontinuation of DAPT only	50	37.6
		No biopsy, discontinuation of ASA + DAPT	63	47.4
DOAC				
How do you proceed with a patient on medication with DOAC?	CNB	Immediate biopsy	83	33.1
		No biopsy, discontinuation of DOAC	168	66.9
	VAB	Immediate biopsy	12	7.9
		No biopsy, discontinuation of DOAC	140	92.1
Phenprocoumon				
How do you proceed with a patient on medication with phenprocoumon?	CNB	Immediate biopsy	63	25.1
		No biopsy, discontinuation of phenprocoumon (+ INR control)	188	74.9
	VAB	Immediate biopsy	5	3.3
		No biopsy, discontinuation of phenprocoumon (+ INR control)	147	96.7
Prophylactic heparin				
How do you proceed with a patient on medication with prophylactic heparin?	CNB	Immediate biopsy	223	88.1
		No biopsy, discontinuation of heparin	30	11.9
	VAB	Immediate biopsy	93	63.7
		No biopsy, discontinuation of heparin	53	36.3
Therapeutic heparin				
How do you proceed with a patient on medication with therapeutic heparin?	CNB	Immediate biopsy	132	53.9
		No biopsy, discontinuation of heparin	113	46.1
	VAB	Immediate biopsy	38	27.3
		No biopsy, discontinuation of heparin	101	72.7
General management				
If you do not perform a biopsy with ASA (+/− DAPT) or DOAC, who primarily decides on the discontinuation of the medication and on the required period?		Gynecologist/radiologist (who performs the biopsy)	74	33.3
		Consultation with the internal medicine department	33	14.9
		Local GP	54	24.3
		Depends on the individual situation	57	25.7
		Other	4	1.8
If you do not perform a biopsy in patients on phenprocoumon, who primarily decides on the discontinuation of the medication and on the required period?		Gynecologist/radiologist (who performs the biopsy)	70	29.9
		Consultation with the internal medicine department	18	7.7
		Local GP	140	59.8
		Depends on the individual situation	0	0
		Other	6	2.6

Table 3 (continued)

Therapy Procedure	Management	*n*	%
In case of the discontinuation of phenprocoumon, do you have a specific threshold of INR that you regard as minimal for performing the biopsy?	Yes	161	69.7
	No	33	14.3
	Decision of the GP or other specialist	37	16.0
In case of the discontinuation of phenprocoumon, do you recommend a bridging procedure with heparin?	Yes	111	48.3
	No	12	5.2
	Decision of the GP or other specialist	107	46.5
In case of the discontinuation of phenprocoumon, do you demand a recent INR laboratory result before performing the biopsy?	Yes	171	76.0
	No	54	24.0
Does your peri-interventional approach with anti-coagulation or your risk perception differ between a biopsy of the axilla compared with a biopsy of the breast?	Yes	104	42.1
	No	143	57.9

ASA, acetylsalicylic acid; DAPT, dual anti-platelet therapy; DOAC, directly acting oral anti-coagulants; CNB, core needle biopsy; VAB, vacuum-assisted biopsy; GP, general practitioner; INR, international normalized ratio.

Discussion

Due to the absence of high-level evidence regarding the management of breast biopsies on ACT/APT and limited studies supporting the safety of such biopsies, we conducted a survey among a large group of experts in the field to gather insights from clinical practice. These experts were identified via their function as members of medical societies in Germany that are responsible for clinically managing patients with indications for CNB or VAB of the breast. In Germany, breast ultrasound is traditionally a field of expertise for many gynecologists, while for the other modalities, radiologists are normally in charge. Thus, with our survey, we were able to reach a large number of experts. The level of expertise was high as almost two-thirds of all experts held a professional position as a senior physician or higher. This approach of generating pragmatic evidence from management in clinical routine is feasible in terms of costs and effort and has been used for other clinical questions in this field, for example, investigating hygienic aspects for US-guided CNB in breasts in Germany [14].

Biopsies of the breast are normally regarded as low-risk interventions. Clinically relevant complications (such as bleeding that requires intervention after the biopsy) are exceedingly rare events in patients who do not take any ACT/APT [15–17]. On the other hand, only a few studies have addressed the performance and safety of breast biopsies in patients who continue their ACT/APT medication. In a first prospective study by Melotti et al. from 2000, no patients who underwent ACT/APT experienced clinically significant complications, and the results suggested rates of hematoma formation similar to those in the control group [18]. A subsequent study by Sommerville et al. in 2008 found equal hematoma rates but a significant increase in bruise formation [19]. In a study by Chetlen et al. [20] from 2013, no clinically significant hematomata or bleeding complications were found at all in biopsies in patients on ACT/APT. In this latter study, the authors defined hematomata as clinically significant if they caused significant post-procedure discomfort or required clinical follow-up, surgical or percutaneous drainage, or hospital admission. A recent study by Cameron et al. [21] from 2018 (with only $n = 42$ patients) found no post-discharge bleeding after CNB in patients who were on anti-thrombotic therapy. All these above-mentioned studies display high variability in their design (including follow-up), in the investigated medication regimens, and in the biopsy methods used (modality and gauges), which impedes comparing or generalizing their results [13]. Nonetheless, all of these studies included at least some patients on warfarin as the primary form of VKA in the USA (which is equivalent to phenprocoumon in Germany). Biopsies in patients on phenprocoumon, in particular, were found to have the highest complication risk among the experts in our survey (Fig. 1).

All authors of the above-mentioned studies concluded that performing biopsies in patients on continuing ACT/APT might be safe. Independent of the ACT/APT regimen used, these studies showed a higher risk of hematoma formation when a larger needle gauge was used. This finding is reflected in our survey because our participants stated that there is a greater risk of bleeding complications in VAB in comparison with CNB, and the participants indicated generally lower rates of performing VAB in patients on ACT/APT.

In our study, only 44.2% of experts had a standardized management plan, but nearly all experts (96.3%) routinely gathered medical histories focusing on relevant ACT/APT medications (Table 2). This procedure is generally recommended, for example, by the European Society of Breast Imaging, which additionally recommends performing a

screening for bleeding disorders [5]. On the other hand, further routine screening using laboratory profiles to predict the risk of bleeding before breast biopsy was not found to be cost-effective [22] and was not regularly performed among the experts in our survey (9.7%; Table 2).

Concerning specific medications, our survey revealed discrepancies in risk perception and clinical management: the majority of experts preferred discontinuing therapy with DAPT, DOAC, or phenprocoumon before performing CNB, except for patients on ASA or for those on prophylactic or therapeutic heparin. Consequently, phenprocoumon and DOAC were regarded as having the highest risk of clinically relevant bleeding complications (Fig. 1). Despite this risk perception, CNB was performed in patients on phenprocoumon and on DOAC by 25.1% and 33.1% of experts, respectively, whereas VAB was performed in patients on phenprocoumon and on DOAC only by 3.3% and 7.9% of experts, respectively. The differences in risk perception between CNB and VAB became evident with the survey results: In general, with larger needle sizes and larger numbers of planned samples, greater attention was paid to bleeding complications, which led to higher individual thresholds for performing VAB in patients on continuing ACT/APT. Interestingly, performing biopsies of axillary lymph nodes did not lead to changes in management for the majority of experts (57.9%: Table 3).

In general, the decision of whether to discontinue therapies should be made in close collaboration with the prescribing physician while taking underlying medical conditions into account. It is also important to consider the fact that unnecessary changes in ACT are related to delays in diagnosis and unnecessary costs for the healthcare system [23]. Depending on national or local recommendations, these agents such as phenprocoumon may be discontinued some days before (international normalized ratio-adjusted with a target international normalized ratio of 1.8–2.0) and resumed 12 h after the procedure (under bridging with heparin). In contrast to this management with phenprocoumon, DOACs normally have a lower discontinuation time of max. 48 h (depending on the specific anti-coagulants, dosage, and renal function) with no need for bridging. Thus, discontinuing before biopsy is feasible in clinical routine. On the other hand, if the decision is made for continuing DOACs for the biopsy (as it is declared by one-third of all experts for CNB in our survey), a pragmatic pharmacokinetically driven approach could be performing the biopsy in the trough level, i.e., immediately before the next dose is due to be administered. For any patient who experiences bleeding during the procedure, regardless of anti-coagulation status, manual compression (plus a pressure bandage) is indicated until all bleeding has ceased.

As there is no strong evidence for breast biopsy management in patients on ACT/APT, our survey targeted specialists. This approach has been used before in a short survey in the USA [20]. Although the ability to generalize their results is unclear due to the low absolute response rate (n = 16), the results demonstrated high heterogeneity in terms of the specific management of patients on ACT/APT. Comparable to our results, around 25% of US experts did not discontinue VKA before performing CNB. On the other hand, biopsy in patients on ASA and clopidogrel was performed by only 37.5% and 25%, respectively. Regarding the decision to discontinue a specific medication, over 90% of respondents indicated that the responsibility lay with the referring physician managing the patient's ACT/APT. This rate of involving other medical specialties was higher than what was observed in our cohort. However, regarding complications after biopsies, the results showed a very low rate of clinically relevant complications. Results from another survey among 51 consultant breast radiologists and 48 consultant breast surgeons from the UK published in 2008 also showed a wide variety of managing strategies for breast biopsies, while almost all of the UK experts performed CNB under ASA, only half under VKA and DAPT. Concerning VAB, around 70% performed biopsies on ASA but only one-third on DAPT and 10% on VKA [24].

Limitations

The primary limitation of our study lies in the evidence level attainable with the presented data. Given the absence of prospective and controlled clinical data in this field, reliance on clinical experience and expertise is necessary. Consequently, the evidence level remains at the level of expert consensus. Additionally, it is important to note that this survey was constructed based on an expert panel in breast diagnostics and has not been validated.

Conclusions

Our large-scale survey of experts in the field of breast diagnostics in Germany revealed that most experts view performing CNB or VAB in patients on ASA or on prophylactic dose heparin as safe in clinical routine. Thus, for future clinical practice, this approach might be feasible in both CNB and VAB as a standard procedure, i.e., discontinuing ASA and prophylactic dose heparin is not necessary. Nonetheless, performing CNB or VAB in patients on DAPT or on ACTs (e.g., DOAC, phenprocoumon) only appears feasible for a minority of experts. However, both the limited available evidence and our survey results indicate that a significant portion of experts find it acceptable and manageable to perform CNB or VAB without discontinuing these medications, despite the potential risk of clinically relevant complications, when compared to the general population. Alternative approaches include discontinuing the medication and/or engaging in individual consultations with the prescribing specialist.

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Statement of Ethics

This survey among medical professionals of specific medical field did not require ethical approval in accordance with local guidelines (Ethics Committee of Heidelberg University Medical School). Written informed consent from participants (including the permission to publish the results) was obtained digitally prior to conducting the survey.

Conflict of Interest Statement

The authors declare that they have no conflicts of interest. All authors are members of one (or both) of the participating working groups.

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Author Contributions

Fabian Riedel, Jörg Heil, and Eva Maria Fallenberg: project development, data collection and management, data analysis, and manuscript writing/editing. Markus Hahn and Werner Bader: project development, data collection and management, manuscript writing/editing. Benedikt Schäfgen, Sarah Fastner, André Hennigs, Christina Gomez, Anne Stieber, and Markus Wallwiener: manuscript writing/editing. Michael Golatta and Christian Fastner: project development and manuscript writing/editing.

Data Availability Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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